

FIFTH ANNUAL REPORT

OF THE

BOARD OF TRUSTEES

OF THE

OHIO AGRICULTURAL AND MECHANICAL COLLEGE,

TO THE

GOVERNOR OF THE STATE OF OHIO,

FOR THE YEAR 1875.



COLUMBUS:

NEVINS & MYERS, STATE PRINTERS.

1876.

COLUMBUS, November 15, 1875.

To the HON. WILLIAM ALLEN, Governor of the State of Ohio:

SIR: I have the honor of transmitting to you the annual report of the Trustees of the Ohio Agricultural and Mechanical College, with the accompanying documents, numbered consecutively from one to twelve.

Respectfully,

J. SULLIVANT, *Secretary.*

BOARD OF TRUSTEES.

HON. RALPH LEETE, <i>President</i> ,.....	Ironton.
JOSEPH SULLIVANT, Esq., <i>Secretary</i> ,.....	Columbus.
HON. ALEXANDER WADDLE,.....	South Charleston.
HON. WARREN P. NOBLE,.....	Tiffin.
HON. WILLIAM LARWILL,.....	Bucyrus.
HENRY S. BABBITT, M. D., <i>Treasurer</i> ,	Columbus.

FACULTY.

EDWARD ORTON, Ph.D.,
PRESIDENT, AND PROFESSOR OF GEOLOGY.

T. C. MENDENHALL, A.M.,
PROFESSOR OF PHYSICS AND MECHANICS.

SIDNEY A. NORTON. A.M., M.D.,
PROFESSOR OF GENERAL AND APPLIED CHEMISTRY.

REV. JOSEPH MILLIKEN, A.M.,
PROFESSOR OF THE ENGLISH LANGUAGE AND LITERATURE, AND OF THE FRENCH AND GERMAN LANGUAGES.

NORTON S. TOWNSHEND, M.D.,
PROFESSOR OF AGRICULTURE.

R. W. McFARLAND, A.M.,
PROFESSOR OF MATHEMATICS AND CIVIL ENGINEER, AND INSTRUCTOR IN MILITARY TACTICS.

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ASSISTANT PROFESSOR OF THE LATIN AND GREEK LANGUAGES.

ALBERT H. TUTTLE, M.Sc.,
PROFESSOR OF ZOOLOGY AND COMPARATIVE ANATOMY.

WILLIAM COLVIN,
PROFESSOR OF POLITICAL ECONOMY AND CIVIL POLITY.

THOMAS MATHEW,
INSTRUCTOR IN FREE-HAND AND MECHANICAL DRAWING.

ALICE WILLIAMS,
ASSISTANT IN DEPARTMENT OF MODERN LANGUAGES.

REV. JOSEPH MILLIKEN, A.M.,
LIBRARIAN.



REPORT OF THE TRUSTEES.

Since my last report the Ohio Agricultural and Mechanical College has been steadily fulfilling its mission in the educational field.

The President and professors have been diligently engaged in carrying out the programme and courses of study as determined by the Trustees at the organization of the College, not only all that was required by the act of Congress, but affording unusual facilities to students who wish to acquire a practical and liberal education, and become fitted for the various professions and industrial pursuits of life.

The College is now provided with a sufficient corps of well-qualified and earnest teachers, and a fair equipment of apparatus and means of objective teaching; but by no means such as it ought to have, and which it must have, to enable it to maintain a respectable and useful standing among similar institutions.

We must again call attention to the fact that, when Congress offered to the various States liberal donations in land or scrip upon condition there should be established therein one or more institutions of learning, in accordance with the provisions of the act donating these lands, it was entirely optional with the States to accept or refuse the grant and its conditions.

After full and particular consideration and deliberation, the State of Ohio, through its Legislature, did accept the grant, with all its provisions, and solemnly pledged itself to fulfill all its conditions. The State, by this official act, became not only morally but legally bound to carry out in a fair and liberal manner the obligations it thus voluntarily assumed.

The land scrip, amounting to 630,000 acres, the State ordered to be sold and the proceeds placed in her own treasury, and the interest, at six per cent., constitutes the available annual endowment of the College.

Some of the States, although receiving less of the Congressional endowment than the State of Ohio, yet, by a wiser policy in the disposition of the land scrip, will receive a larger fund from its sale.

The scrip falling to Ohio was sold for a little more than fifty cents per acre, whereas if, in accordance with the wishes of the friends of such an institution as the donation of Congress intended to establish, the scrip,

or the greater part of it, had been located on government lands, the endowment fund of the Ohio Agricultural and Mechanical College would have been many times greater than it is; or if the proceeds of the sale of scrip had been turned over to the corporation of the College, they could have been safely invested in State, county, and city bonds, yielding two to four per cent. more than the State allows, thus greatly increasing the means of the College.

Over and beyond the obligations voluntarily assumed by the State to carry out in good faith and in a manner commensurate with the position and dignity of Ohio, its trust in reference to this College, the friends of this College claim that the above facts make a strong plea for a liberal policy from the State towards an institution of its own creation—an institution wherein so many of the youth of the Commonwealth, in full possession of all their faculties, are being fitted for an honorable and useful citizenship.

The State of Ohio, from first to last, has expended millions upon her benevolent and reformatory institutions for the unfortunate and the vicious.

We repeat, that the friends of the Agricultural and Mechanical College do not complain of this, but rather commend this generous and benevolent policy; but they do think it strange and inconsistent that this same liberal spirit is not manifested toward an institution alike the property of the State—one which not only deserves recognition, but a liberal and enlightened patronage, founded as it is to carry into practical effect the beneficent intentions of Congress towards the industrial classes, and supplement and round out and make more complete that great system of public and free education upon which the people willingly expend millions every year, and which is justly the glory and pride of the State.

It is true, however, that hitherto the College has not received one cent from the means of the State, and the farm of three hundred acres, the college edifice and other buildings, and all the equipments, with one exception, have been provided from the generous donation of Franklin county and the city of Columbus.

The fund thus derived is about exhausted, and the Trustees are compelled to apply to the Legislature for moderate aid to complete the equipment of the College and render it more useful and efficient. In fact, true economy demands that the large sums already expended should not be lost or rendered less effective by a narrow and niggardly policy on the part of the State.

The Trustees believe that an appropriation of fifty thousand dollars, judiciously expended *now*, will place the College in such a position of

efficiency and usefulness that there will be no need for a long time to come, if ever, to apply for more State aid, unless on some unforeseen and special occasion. But even if it were otherwise, what would be a few thousand dollars, annually appropriated, in comparison to the great benefits conferred by the high and practical education it is the function of this College to supply so cheaply to those so much needing it.

Several of the educational institutions of the Eastern States are rich indeed, as compared with us, and yet are using every exertion to increase their endowments, as experience has shown that with every such increase their field of usefulness and influence is more widely extended. Indeed, it is obvious that no meagerly endowed college can adequately meet the demands for the broader and more practical education which the wants of modern life require.

Until a more liberal policy is established and maintained, we will continue to be tributary to other seats of learning, and scores and hundreds of our youth will go every year in the future, as they have in the past, to enjoy the advantages not to be had, in their opinion, in any college in this State.

It is but reiterating the opinions of the most thoughtful educators who have studied the subject, to say, if the means and endowments of the various colleges in this State were consolidated into a much smaller number, the cause of learning would thereby be greatly promoted.

The Trustees of the Ohio Agricultural and Mechanical College are aware that there is prejudice against it, resulting, in part, from selfish motives and interests and supposed antagonisms to other institutions, who thus naturally, perhaps, not only oppose any legislative aid, but even any recognition by the State of its own child. But this is a mistake: our interest, like theirs, is in the direction of liberal and sound learning, and although in some things compelled by the organic act of our creation to run parallel with the courses of other institutions, yet it is the main object of this College to supply in kind and amount courses not usual in others of the State.

There is, then, misconception as to the scope and aim of this College, which we feel confident will disappear upon a personal inspection, which is cordially invited, to the practical and thorough work of this institution.

For the kind and amount of this work, and the present condition of the classes, reference is made to the accompanying report of the President and Faculty.

From time to time our wants and requirements have been set forth to the Legislature, but hitherto in vain, and we will only now allude to a

few. Beside provision for a fuller and more complete equipment of several departments, one of our most pressing wants is a library. No argument is needed to any intelligent man to demonstrate its necessity to such an institution. A carefully selected collection of books, mostly for reference, will be of great value to students and professors, and, therefore, we most earnestly and respectfully ask special attention to this subject. Indeed, in some of the departments, books, maps, charts, and drawings are as much a necessity, as has been truthfully said by one of the professors, as is the air-pump or electric battery in the physical department, or retorts and crucibles in the chemical laboratory, or rock specimens and ores in geology or metallurgy.

Without going into detail, it may be briefly stated here that none of the departments are as fully supplied as they ought to be, or, in fact, as *they must be* at some time or another, and it would be wise to do it as soon as possible.

Our grounds are yet to be improved, and our gardens, nurseries, and arboretum to be established.

We have constant applications for work by persons desirous of availing themselves of the advantages furnished by this College, and who wish to lessen, by some sort of labor, even the moderate expenses of the education here presented; but, unfortunately, the work we are able to furnish is quite irregular, and but small in amount. What there is, is given to the students, who most earnestly wish for more. To obviate, in part, this difficulty, which is a serious one to a large class of meritorious persons, it has been suggested in former reports that an appropriation to establish a machine shop, and furnish it with some of the more common and simple machinery, would give to a class of our students steadier work at more remunerating prices.

In order to afford facilities for the self-sustaining of students, the Trustees have built a club-house, which is now fully occupied, and it would be well to increase these accommodations.

We might go on to enumerate our wants in detail, but if the Legislature entertains the request we make for an appropriation of fifty thousand dollars, the Trustees or Secretary of the Board, the President, and professors in the institution will gladly meet any committee, and show how the appropriation should be applied and distributed among the departments.

We invite personal examination of the College in all its departments, believing that any candid person will be convinced that a good and thorough work is being accomplished, and a broad and solid foundation laid for great usefulness in the future—a usefulness which will be increased

and quickened, or diminished and retarded, as a fair and liberal policy, or the reverse, is adopted by the Legislature in regard to the Ohio Agricultural and Mechanical College, one of its own institutions, and, from its real merits and great possibilities, as much entitled to recognition and fostering care as any other State institution.

J. SULLIVANT,

Trustee and Secretary of Board.

PROCEEDINGS OF BOARD OF TRUSTEES.

COLUMBUS, OHIO, January 6, 1875.

The fifth regular annual meeting of the Trustees of the Ohio Agricultural and Mechanical College took place this day, at 2 o'clock P. M., according to previous notice, and all the members being present and answering to their names, to wit, Leete, Darwill, Noble, Sullivant, and Waddle, the Board was called to order and proceeded to business.

Numerous matters pertaining to the interests of the College were brought forward and discussed, and it was determined to proceed to visit and inspect the college-farm, boarding-house, and new club-house on tomorrow, at 9 o'clock A. M.

THURSDAY, January 7, 1875.

The Board met at 9 o'clock A.M. and proceeded to the college building, holding an interview with the professors and inspecting the rooms, out-buildings, and various departments, grounds, boarding-hall, and new club-house erected for the accommodation of those students desiring to board themselves, and returning to the city at 2 o'clock P.M., when the Board met and proceeded to business.

An agreement having been entered into by and between the College (represented by the members of the Board) and the Columbus Street Railroad Company, whereby a cheap, efficient, and satisfactory communication between the city and College was to be secured by means of the construction of an extension of said road, the contract was submitted for approval and confirmation to this Board—the contract being founded upon an ordinance of the City Council of Columbus. The contract and ordinance are as follows:

[copy.]

Article of an agreement made and entered into this 4th day of November, 1874, by and between the Columbus Street Railroad Company, party of the first part, and the

Agricultural and Mechanical College of Ohio, and William Dennison and Robert E. Neil (personally, and as executors of the estate of William Neil, deceased), and G. G. Collins, George J. Atkinson, Joseph Guitner, and Augustus Converse, parties of the second part, witnesseth:

That said Columbus Street Railroad Company do agree to build, construct, and operate a street railroad from the intersection of West Goodale street with Neil avenue, thence with Neil avenue to the north end thereof, at the farm of the said Agricultural and Mechanical College; said street railroad to be built and operated according to the terms and provisions of a certain ordinance for that purpose, now before the City Council of the city of Columbus, Ohio, for passage and adoption.

And in consideration of such street railroad being built and operated as aforesaid, said Agricultural and Mechanical College authorities agree to pay the first parties the sum of three thousand dollars, in payments as follows, to wit: Forty per centum of said three thousand dollars when the said road is half done, and sixty per centum thereof when the road is finished and the cars running thereon, according to the provisions of said ordinance; and the other parties of the second part are to pay four thousand dollars to the first parties on the same terms as that of the said College.

[Signed]

COLUMBUS STREET RAILROAD COMPANY,

E. T. MITHOFF, President.

J. SULLIVANT,

Trustee and Secretary of Ohio Agricultural and Mechanical College.

WILLIAM DENNISON AND R. E. NEIL,

Executors of Wm. Neil, under his last will and testament, by R. E. Neil.

COLLINS, ATKINSON, GUITNER, AND CONVERSE.

AN ORDINANCE

Granting the consent of the City Council to the Columbus Street Railroad Company to extend their road by constructing a continuation thereof on Goodale street and Neil avenue to the Agricultural and Mechanical College farm.

SECTION 1. *Be it ordained by the City Council of the City of Columbus*, That the consent of the City Council of the city of Columbus is hereby given to the Columbus Street Railroad Company to extend their road by constructing a continuation thereof on Goodale street and Neil avenue, in the city of Columbus, by the following described route, to wit: Commencing at the present line of said company's road on High street where it intersects with Goodale street, thence westerly in the center of Goodale street to its intersection with Neil avenue, thence northerly in the center of Neil avenue to the north end thereof, at the Agricultural and Mechanical College farm.

And the said Council being satisfied that a majority of the owners of the lots and lands abutting upon said Goodale street and Neil avenue, where said road is proposed to be extended, have given their consent in writing for the construction of said road, and that such consent is filed with this Council, it hereby declares its satisfaction; provided, the said city of Columbus expressly reserves the right to remove or obstruct, or authorize the same to be done, any portion of said railroad track whenever it shall be necessary in laying down or repairing water pipes, gas pipes, sewers, drains, gutters, or cisterns, or for any other work required to be done by said city, not disturbing the running of cars where it can be avoided, without incurring any liability for damages

to said company; provided, also, the said city of Columbus shall not be liable in any way to said company for any damages it may sustain from the breaking or overflow of water from any sewer or drain, or from the breaking of any water pipe or gas pipe, or by reason of any change in the grade of any of the streets of said city, or by reason of any other work or improvement required to be done by said city of Columbus; and, provided, the said company, shall be liable for, and shall hold the said city of Columbus forever harmless from any and all damages which shall accrue to persons or property by reason of the construction, existence, use, or management of said street railroad. The said railroad company shall, in all respects, conform to such general regulations as may from time to time be prescribed by the City Council of said city of Columbus as to the running of vehicles in the streets of said city. The said company shall not use said road for any other purpose than the transportation of passengers and their baggage and packages, and shall not charge more than seven cents for each passenger carried the entire length of their roads, from the north end of said Neil avenue to the south terminus of their High street road, or any less or shorter distance thereon, including reasonable baggage; and said company shall sell tickets in packages of five for twenty-five cents, and twenty-four tickets for one dollar, and one hundred and twenty-five tickets for five dollars, and no charge to be made for children under the age of seven years attending their parents; and any agent or employé of said company who shall charge or collect any greater sum than as aforesaid shall be fined in any sum not exceeding ten dollars, upon conviction thereof before the Mayor.

The said railroad company shall observe the following rules, regulations, and restrictions in running their cars upon their said road, within said city, to wit: In the night all cars, while running, shall be provided with suitable signal lights. No car shall be drawn at a greater speed than six miles per hour. Cars driven in the same direction shall not approach nearer each other than one hundred feet, unless from unavoidable necessity. No car shall be allowed to stop upon a cross-walk, nor in front of any intersecting street, unless from unavoidable necessity; and when the conductor of any car is required to receive or discharge passengers, the car may be stopped so as to place the platform of the car slightly over the crossing. No car shall be allowed to remain standing upon the line of said route for passengers, or for any other purpose, so as to impede any other vehicles, but shall be subject to all police regulations which are or may be prescribed in regard to other vehicles, as far as they may be applicable. The conductors and drivers of cars shall not allow any lady or child to enter or leave any car while in motion, and shall keep vigilant watch for all teams, carriages, persons, and obstructions upon or near the track, and, upon the first appearance of danger therefrom, shall give warning, and stop the car, if necessary, to prevent accident. The cars shall always be entitled to the track, and the driver of any vehicle obstructing the same shall turn out and leave the track free upon the approach of any car as soon as practicable, and so as not to impede the car. Any car-driver, conductor, agent, or employé of said railroad company, who shall in any manner violate any or either of the provisions of this ordinance, shall upon conviction thereof before the Mayor of said city, be fined in any sum not exceeding ten dollars. The said Columbus Street Railroad Company are to lay down, make, and complete said railroad to the acceptance and approval of the City Civil Engineer of said city, within ninety days from the passage of this ordinance, and immediately on the completion of said railroad, shall place upon and keep running on said railroad, between the Agricultural College and

the southern terminus of the Columbus Street Railroad, every day, at least once every half hour, between sunrise and sunset, and one car at least after sunset—the running time to be so arranged as to meet the wants and use of the Agricultural College, as designated, from time to time, by the president of said college—and for such wants and uses, as well as for transportation of all passengers and their reasonable baggage over said railroad, a sufficient number of good, substantial, clean, and commodious cars for the transportation of passengers and their reasonable baggage, to be continued for the term of twenty years from the date of the passage of this ordinance, for which time this grant is given; and this grant is hereby extended to the road of said company on High street, so that said grant on High street shall be extended and continued so that it shall expire at the same time this grant expires, and all the rules, regulations, and restrictions contained in this ordinance are to apply to and be enforced against the said High street road. Said company shall make, construct, and keep in order and repair all that part of said street included between the rails of said tracks and switches, in the same manner and with the like material as the said street is constructed and repaired, so long as it shall use the same for its railroad.

Any failure by said railroad company to comply with the provisions of this ordinance, or with any general ordinances of the city regulating the use of said streets, or the police regulations thereof, shall render such railroad company liable to said city in any action of damages for such failure, and the Council of said city, after giving said company twenty days' notice, shall have the right to order any work to be done on said railroads necessary to keep them in repair as required by this ordinance, and when said work is done to charge the cost and expense thereof upon said railroad company, and upon recovery of such damages, or upon such work being done, the said railroad company shall be liable for the payment thereof; and the road and property of said company, or its assigns, shall be liable to be taken on execution, and sold to satisfy the same; but, in case of any sale of said road, the purchaser thereof shall be authorized to operate the same under the provisions of this ordinance.

SEC. 2. This ordinance shall take effect and be in force from and after its passage and publication according to law, and shall continue in force for and during the term of twenty years from and after its passage.

[Signed]

I. S. BEEKEY, *President of the City Council.*

Attest: FRANK WILSON, *City Clerk.*

Passed November 16, A.D. 1874.

A motion having been made and seconded that this contract and ordinance be adopted and confirmed by this Board, the vote was taken by yeas and nays, and there were for approving the contract: Yeas—Messrs. Leete, Noble, Sullivant, and Waddle—4. Nays—Mr. Larwill—1. So it was hereby declared that the agreement between the College and the Columbus Street Railroad Company is approved and adopted by this Board.

On motion of Mr. Noble, it was hereby ordered by the Board of Trustees of the Ohio Agricultural and Mechanical College that the sum of twelve hundred dollars be and the same is hereby appropriated out of any money in the treasury of said College to the Columbus Street Railroad Company,

on account of the contract entered into between the Trustees of said College and said railroad company; and the Secretary of this Board is directed to draw his order upon the treasury for said sum.

Mr. Sullivant offered the following, which was adopted:

Whereas, President Orton has been invited by the Centennial Commissioners for Ohio to become an advisory member of their Board, and to take charge and direction so as to secure a full display to illustrate the economic geology of Ohio at the Exhibition to be held in Philadelphia in 1876; therefore, it is

Ordered, That President Orton be requested to accept the offered position, provided it does not materially interfere with his duties to this College.

FRIDAY, January 8, 1875.

The Board met at 9 o'clock and proceeded to business.

Certain claims and accounts of Kanmacher & Stark, contained in a communication from them, were not allowed, and further consideration of them, if any, deferred until a future meeting, and the communication was ordered to be filed.

Whereas, Mr. Haerlein, a professional gardener, furnished to this Board of Trustees, on a former occasion, a paper plan or general sketch for laying out and ornamenting the college grounds; and whereas said Board agreed to receive and pay for said sketch on certain conditions, to wit., that said Haerlein was to furnish further details and drawings to facilitate the laying of his plan to the grounds, and furnish such aid and instruction as would enable our agent to do so, then and in that case the said Haerlein was to receive three hundred dollars; and whereas it was represented that said Haerlein had complied with this agreement, he was paid \$300. Now, in February, 1873, said Haerlein was notified to meet Professor Townshend on the grounds, and give explanation and assistance in adapting his plan to the grounds, and notified that sectional plans and drawings had not been received according to his former agreement; and whereas, at a subsequent time said Haerlein did furnish an insufficient and meager diagram of squares and pretended measurements, whereby the roads, walks, and different plats of ground were to be laid out, and the said Haerlein did meet Townshend and spend one-half day on the grounds, and for the said diagram and said labor of one-half day has preferred a bill for the above and for his expenses to and from Cincinnati, amounting to sixty dollars, the Board, after due consideration of all the facts upon record and in the clear recollection of members of this Board, and after consultation with Dr. Townshend (upon whose letters Mr. Haerlein founds his claim), do hereby reject said claim; but that there may be no ground of complaint or misrepresentation of the Board, on the score either of justice or liberality, it is hereby

Ordered, That Mr. Haerlein be paid a further sum of twenty dollars, to cover his expenses in 1873 when visiting our grounds, provided he gives the Board a receipt in full for all claims and services.

A communication, dated "Chillicothe, June 5, 1875," from E. P. Kendrick, was presented and considered by the Board. Mr. Kendrick claims that a former agent of this Board, believing that survey No. 14,905, in Pike county, belonged to the College, sold a certain lot of poplar lumber

off said survey, whereas said survey belonged to E. P. Kendrick, and he prays that the proceeds of the sale be turned over to him.

The letter was ordered to filed; and, on motion, it was

Resolved, That Messrs. Waddle and Leete be a committee to examine and report on this claim.

Samuel Kendrick, Esq., of Chillicothe, former deputy surveyor of lands in the Virginia Military District, appeared before the Board by request, with his plats connecting the surveys of land in said district, and a book in cipher, belonging to said plats. Thereupon, in answer to questions by different members of the Board, he proceeded to explain the connections and dependence between said plats and the field-notes of surveys in said district, showing clearly that either said plats or the records by themselves are of but little use in tracking out and finding unsurveyed lands in said district, and that with the two together the boundary lines of said lands remaining vacant can be easily traced. He also explained why he had not yet completed his agreement with the College to furnish connected plats of certain lands mentioned in said agreement; that he had been obstructed in the performance of that undertaking by reason of the inaccessibility of the records in said land office, for the purposes of making said connections; and at the same time said Kendrick presented to the Board a claim to a certain tract of land of 160 acres, in Pike county, sold by the late J. M. Trimble to Peck by mistake. Whereupon this matter was also referred to Messrs. Waddle and Leete, to ascertain and report the facts in relation thereto to this Board; and also on claims on any tracts of lands arising on any survey of lands made for the College by one Hankins.

On motion of Mr. Noble, it was

Ordered, That the two literary societies in the Ohio Agricultural and Mechanical College be assigned rooms in the fourth story of the east and west wings of said College until otherwise ordered by this Board; and it is to be distinctly understood that the Trustees will resume entire control of the aforesaid rooms whenever in their opinion the interests of the College demand it, and that until that time these societies are but tenants at will of the Trustees, and are at all times to be under the supervision of the Faculty, and such needful rules and regulations as they may find it necessary to dictate; and it is further

Ordered, That the oldest society is to have the choice of rooms.

On motion, duly put and carried, it is

Ordered, That the room-rent in the club-house be fixed at eight dollars per term for each room, and that the Secretary shall furnish a suitable stove to each room, the whole cost of which, when set up complete, shall not exceed fifteen dollars; and the Secretary is further directed to supply, as soon as possible, drains, troughs, and spouting, one cistern, a coal-shed and privy.

Ordered, That the President of the College shall assume and have charge of these rooms, and is to make such rules and regulations for their care and occupancy as he deems just and proper.

On motion, made and carried,

Ordered, That the cylindrical iron casting, being sections of a chimney-stack ordered by former superintendent of buildings, and which are now exposed to the weather in rear of the college building, be gathered by the janitor, with the help of the hands in the employ of the Board, and stored in the north-west basement room of the College.

It is hereby

Ordered, That the account of Captain Barton, amounting to \$—, be allowed, and that his request to have the same credited on his note for land bought of the College, be and the same is hereby granted, and his note is to be credited with the amount.

On motion of Mr. Noble, it was

Resolved, That the Secretary of this Board request the former Executive Committee, and also, the Superintendent of Buildings (R. N. Jones), to file in his office, for future reference, all books of accounts, records, contracts, or other papers relating to the business of said committee and superintendent performed by this Board.

FRIDAY, January 8, 1875.

The Board met at 2 o'clock P. M., and a quorum being present, on motion of Mr. Noble, it was

Ordered, That the regulation of this Board fixing the compensation of the Treasurer at \$400 a year be and the same is hereby rescinded.

On motion,

Resolved, That this Board do now proceed to elect its officers for the ensuing year, dating from the 6th of January.

The Board proceeded with the election, and, upon counting the ballots, Ralph Leete, having received all the votes cast, to-wit, five, was declared to be elected as President of this Board for the ensuing year; and Joseph Sullivant, having received all the votes cast, was duly elected as Secretary; and Henry S. Babbitt, having, in like manner, received all the votes, was elected as Treasurer.

After a full discussion by the Board, and the unanimous agreement of the members as to the importance of an adequate knowledge of the fundamental and accepted principles of political economy, especially in their application to the great industrial interests of the State, and recognizing the necessity of imparting such knowledge to the students in the Ohio Agricultural and Mechanical College, it was unanimously

Ordered by the Board of Trustees of the Ohio Agricultural and Mechanical College, That

the chair of "Political Economy and Civil Polity" be filled by the appointment of William Colvin, of Cincinnati, to said chair, at an annual salary of \$2,500 and this to take effect from the beginning of the College term in September, 1875; and the Secretary is hereby directed to inform said Colvin of his appointment.

Mr. William Leete appeared before the Board, and, after making verbal explanations in relation to various matters connected with the Virginia Military District, presented a list of unsurveyed lands therein, and likewise a list of notes for lands sold, which were deposited with the Treasurer, after having been examined by Messrs. Leete and Noble, the Committee on College Lands.

Likewise Mr. Armstrong, on behalf of J. M. Trimble, delivered the notes for lands sold by him, which were also examined by the same committee and deposited with the Treasurer, and copies of these lists were directed to be filed with the Secretary.

The Board now adjourned until 10 o'clock A.M., to-morrow.

SATURDAY, January 9, 1875.

The Board met at 10 o'clock A.M., and proceeded to business.

It was, on motion,

Ordered, That the bill of the "Iron-ton Commercial" (a newspaper), amounting to \$12.50, be allowed and paid, said bill being for advertising sale of Virginia Military lands for three months.

The committee to whom was referred the accounts of the Treasurer reported as follows:

The committee appointed to examine the Treasurer's account have examined the same, and compared it with the vouchers on file, and find it correct.

[Signed]

A. WADDLE,

WM. LARWILL.

This report was accepted and approved, and the committee discharged.

The committee to whom was referred the account and financial statement of N. S. Townshend, Professor of Agriculture, relating to farm operations, presented the following report, which was accepted, and the committee discharged:

The Committee on Accounts, to which was referred the account of N. S. Townshend, have examined the same, and find that in many instances there are no itemized statements such as should be required of all persons disbursing public funds. In one instance, the claim of Thomas Anderson has been twice paid, and in others find no vouchers, as in the case of James Dix, \$233.40; and George Dix, \$80.00; Morgan Thomas, \$242.00. We find the balance due said Townshend, as per his statement, \$1,273.71; but deducting therefrom the above accounts, for which no vouchers are furnished, and the Anderson claim (twice paid), find the balance due him \$700.81.

[Signed]

A. WADDLE,

WM. LARWILL.

The following members were appointed to act as an Executive Committee for the ensuing year, to wit: Waddle, Larwill and Sullivant—Waddle to be chairman thereof.

A request was presented to the Board by Professor Mendenhall, that he be allowed to make certain additions or alterations in the house he occupies, and that the expenses thereof be deducted from his rent—basing this request on the claim that his house was inferior in style, accommodations, and conveniences to the others, and his rent, therefore, disproportionate—and, after considerable debate

Ordered, That Professor Mendenhall, under the approval of the Secretary, be permitted to make such alterations in his house as he desires, not exceeding the sum of \$300, and at his own expense, the same to be deducted from his rent.

Ordered, That the College grounds, with reference to their improvement by planting trees and shrubs, the laying out of walks, grading, constructing roads, and general improvement and ornamentation, be placed under the charge of Mr. Sullivant; and that the farm and all operations thereon, such as systematic experiments in agriculture, fencing, ditching, draining, culture and care of crops, care and management of stock, shall be under charge and direction of the Professor of Agriculture—the operations of Mr. Sullivant and Professor Townshend are, however, to be subject to the approval of the Executive Committee; and it is further

Ordered, That the farming year shall commence on the first day of April, annually, and all farming operations and experiments shall be planned accordingly; and at this time a complete exhibit or invoice of the stock of animals, farming utensils, and implements on hand, with all unsold crops, and the value of all these, shall then be made by the Professor of Agriculture to the Executive Committee, together with an itemized account of all farm work and experiments, and the cost thereof. The general scheme of crops and farm operations and experiments for the ensuing year shall then also be submitted by him for approval to the Executive Committee, with a statement of the means and help required for his operations, it being understood he is to have all that is necessary.

On motion, it was

Ordered, That the sum of \$32,000 be and the same is hereby appropriated from the endowment fund for the support and maintenance of the College for the ensuing year, said sum to be drawn on the warrant of the Secretary, as prescribed by the regulations of the Board.

And now, to give time for the committee to examine and report upon the subject matters referred to them, the Board adjourned until Monday, January 11, at 2 o'clock P.M.

MONDAY, January 11, 1875.

The Board met at 2 o'clock P.M., and considered a proposition from Mr. George Engelke to take charge of the boarding-house—some members having been informed that the present occupant desired to leave; but as Mr. Worlein has a lease of the premises until the first of July next, the

Board declined to take any further action than to say, upon Mr. Worlein leaving before that time, the Secretary should enter into a suitable contract with Engelke, under the security and guarantee as proposed by him, and in accordance with the understanding of the Board, said lease or contract to run until the annual meeting of the Board, when the whole matter of further continuance and arrangement will be considered by them.

On motion,

Ordered, That the Secretary is hereby directed to draw an order on the Treasurer in favor of N. S. Townshend, Professor of Agriculture, for any balance found due him as Farm Superintendent.

Ordered, That the by-laws of this Board be amended by striking out the word "chairman," where the term occurs in said by-laws, and inserting in its place the word "president."

The committee to whom was referred the communication of E. P. Kendrick made the following report, which is hereby accepted and the committee discharged from the further consideration thereof:

The special committee to which was referred the communication of E. P. Kendrick, addressed to the Trustees of the Ohio Agricultural and Mechanical College, relative to certain timber cut on survey No. 14,905, in Pike County, Ohio, and in the Virginia Military District, have made inquiry into the facts of the case, and find,

1st. That the land mentioned in said communication was improperly included in a survey made by one Ralph Hankins for said College, and that Mr. Trimble, former agent of the College for its lands in said district, was probably misled by the erroneous survey of said Hankins in asserting claim to said timber.

2d. That one Wm. Ashenfelter entered upon said survey in 1872 or 1873, as a mere trespasser, and cut timber there, and worked it into lumber, and that the compromise made by said Trimble with Ashenfelter was made by him in entire good faith that said land rightfully belonged to the College; that Mr. Trimble never actually received any money on account of said compromise, but that the amount specified (\$300) is, as they are informed, in the hands of one Charles Utman, of Hillsborough, Ohio, as bailee for its owner.

Your committee is of opinion that as the title to said survey 14,905, at the time the trespass was committed, was in said Kendrick, he all the time had the legal right to eject the original trespasser, and to claim the timber procured by such trespasser from said land, or to claim and recover said \$300 in the hands of Utman; and that it is his right to do so at any time before he shall be barred by the statute of limitation.

Your committee therefore recommends that an order be made disclaiming any interest in said land or money as the result of said compromise, and that a duly certified copy of the same be forwarded to said Kendrick by the Secretary of the Board, with this report.

[Signed]

RALPH LEETE.
A. WADDLE.

January 11, 1875.

After this the Board passed the following preamble and order :

The special committee, consisting of Messrs. Waddle and Leete, to which was referred the claim of E. P. Kendrick for \$300 on account of timber cut and removed from survey No. 14,905, having reported in substance that the land embraced in said survey belonged to said Kendrick at the time the timber complained of was cut, and that Mr. Trimble, former agent of the lands in the Virginia Military District belonging to the Ohio Agricultural and Mechanical College, was led into an error in claiming for the College, timber cut, by an erroneous survey of said lands made by one Ralph Hankins; that said sum of \$300 mentioned is in the hands of one Charles Utman, of Hillsborough, as bailee for the owner; it is therefore

Ordered by the Board of Trustees of the Ohio Agricultural and Mechanical College, That they disclaim for said College any claim to or interest in said money; and that the Secretary certify, under seal of said College, this action of said Board to E. P. Kendrick, Esq., at Chillicothe.

The Board now adjourned.

TUESDAY, January 12, 1875.

The Board met, and a quorum being present, were called to order and proceeded to business.

On a statement made by Mr. Sam. Kendrick, and confirmed by Wm. Leete (agent for the College for the survey and sale of the Virginia Military lands), that a former agent had, by mistake, sold a tract of land belonging to said Kendrick, the matter was referred to a special committee to examine and report.

Said committee now submitted the following, and the committee was discharged :

The committee to which was referred the matter of the claim of Sam. Kendrick for one hundred and sixty acres of land in Pike county, part of survey No.—, having had before them the report of survey of said land and sale made by the late J. M. Trimble, find that said sale was made in the faith of said Trimble that said one hundred and sixty acres was the property of the College at the time the sale was made, and that he was led into the mistake by an erroneous survey of the same, made by one Ralph Hankins, one of the surveyors for the College.

They also find that said Kendrick was, at the time of said sale, and still is, the owner of said land, and that the same was sold for \$2.50 an acre.

The committee therefore recommend that the Board accept the proposition made by said Kendrick to them, to compromise and adjust the matter by Kendrick's conveying said land to the College, and that the College turn over to him said purchase money upon his delivery of such deed.

[Signed]

RALPH LEETE,
A. WADDLE.

The report of Messrs. Waddle and Leete, to whom was referred the

matter of Sam Kendrick, relative to one hundred and sixty acres of land sold by mistake, having been made to and considered by the Board, it is

Ordered, That the same be approved, and that the said Kendrick be paid the sum of \$2.50 per acre for said land, out of any moneys of said College, upon said Kendrick executing to said College a deed in due form, with proper assurance of title; and there is hereby appropriated the sum of \$400 for that purpose.

After a free discussion of the importance of getting, if possible, an increase to the endowment fund of the College, it was determined to make a further exertion to obtain from Congress an act to convey to the College the "swamp lands in Ohio," and also to press before the Legislature the bill now pending to grant to the College certain remnants of lands known as "Canal lands," and for this purpose the Board proposed the following:

Ordered, That the resolution passed on the 3d of May, 1874, appointing ex-Governor Dennison, Hon. Warren P. Noble, and Judge Jones a committee to proceed to Washington, be and is modified as follows:

That Charles J. Wetmore be appointed to go to Washington to procure certain amendments to be made to the bill introduced into Congress by Mr. Jewett, ceding the "swamp lands in Ohio" to the College, and to aid in procuring the passage of the bill.

Also, Mr. Larwill, a member of this Board, is requested to give his attention to the bill recently introduced into the Senate by Mr. Waddle, to grant certain unappropriated lands of the State to the College, and that he be and is authorized to procure such help as he may deem necessary in the performance of such undertaking; and it is

Ordered, That said Wetmore be paid for his services \$6.00 a day, and reasonable and necessary expenses.

And that said Larwill also be paid his expenses to be incurred in and about his attention to said bill, as well as for the service of any person or persons he may employ to aid him in the performance of said duties; and it is further

Ordered, That the appropriation of \$500, made on May 3d, be applicable to the payment of any expenses that may accrue in carrying into effect this order, and the Secretary is authorized to draw his warrant upon the treasury for such purpose.

The Board adjourned until to-morrow at 7 o'clock P.M.

WEDNESDAY, January 13, 1875.

The Board met at 7 o'clock P.M.

Ordered, That the Secretary of this Board be and is directed to collate and abstract from the various reports, data, and memoranda in his custody, and from any other sources, and bring together in the form of accounts, the receipts and disbursements of the College, derived from all sources, so as to exhibit, as nearly as practicable,

- 1st. The cost of each structure on the College lands.
- 2d. The cost of equipping the several departments, and the items of expenditure for each.
- 3d. The cost of furniture for each building.
- 4th. The annual expense for gas and heating.

5th. The expense and income from the College farm.

6th. Expenditures in improving the College grounds, including roads, path, fountain, etc.

7th. The rent and repairs of the several buildings, whether leased or used for the purposes of the College.

8th. An account of the expense of reclaiming and surveying the lands of the College in the Virginia Military District, and all moneys received and which may accrue from their sale.

9th. That said Secretary procure suitable books, and cause to be entered the foregoing and all other proper matters of accounts, with balances to be struck at the end of each fiscal year, so as to present and preserve, in separate form, every source of income and expenditure.

And for the purpose of carrying into effect this requirement of the Board of Trustees, the Secretary is authorized to employ, and take to his assistance, a competent accountant to open said books, and bring the accounts down to the present year; and he is also authorized to procure dust-proof file-boxes for the preservation of reports, vouchers, and other valuable papers. The compensation for the services of such accountant shall be fixed by the Secretary, with the advice and consent of the Executive Committee.

Ordered, That all contracts for the sale of College lands in the Virginia Military District shall be approved and signed by the President of this Board.

It is likewise

Ordered, That \$500 be and is hereby appropriated, to be expended by Mr. Sullivant, for the benefit of the College library, in the purchase of such scientific or other standard works as he may deem proper.

It was also

Ordered, That the sum of \$500 is hereby appropriated to meet such expenditures as may become necessary, and which are not otherwise provided for by specific appropriations; said sum to be drawn by order of the Secretary, as in other cases.

Ordered, That the Executive Committee of this Board be and are instructed to inquire into and ascertain what are the terms of employment of the janitor and Mr. Harding (the gardener), and when said terms expire; and whether the further employment of a gardener is necessary, and if it is not, then to dispense with his services; also, to ascertain the necessary expense of operating the gas and heating apparatus, and to make such reduction in the cost of operating the same as may be practicable.

[Signed]

RALPH LEETE, *President*.

The Board then adjourned *sine die*.

COLUMBUS, OHIO, May 5, 1875.

At a special meeting of the Board of Trustees of the Ohio Agricultural and Mechanical College, held this day in the rooms of the City Engineer, there were present Messrs. Noble, Waddle, and Sullivant—a quorum of the Board—and the Board was called to order, and Mr. Noble made Chairman.

There were present ex-Governor Dennison, Neil, Hinman, Fisher, and other citizens interested in the extension of the improvement of High street and along the front of the property owned by the College.

After hearing the views and requests of the parties representing the citizens, and an estimate of the cost which would fall on the College as its *pro rata* share of said improvement, the Board proceeded with the City Engineer, to examine the profile of said line of improvement, and went over the ground, giving it personal inspection and receiving explanations.

Adjourned to meet to-morrow at 9 o'clock at the College.

AGRICULTURAL AND MECHANICAL COLLEGE, *May 6, 1875.*

The Board met at 9 o'clock A.M. Present, Messrs. Noble, Waddle, and Sullivant. A conference was held with the President and professors, making also an inspection of the building, farm, and boarding-house; and, reassembling at 11 o'clock, considered the following communication:

[COPY.]

COLUMBUS, OHIO, *May 4, 1875.*

MR. JOSEPH SULLIVANT, *Secretary of the Board of Trustees of Agricultural College:*

DEAR SIR: I am authorized by the State Board of Fish Commissioners to solicit from your Board of Trustees the privilege of erecting a fish-hatching house on the Agricultural College farm, on the rivulet flowing from the spring, and west of the bridge which is crossed in going from the boarding-house to the College. The structure will be a plain wooden one, about eighty by thirty feet, and ten feet to the eaves. Water from the spring will be conducted through gas-pipe to the hatchery.

The building is to be under the control of the Fish Commissioners, but shall at all times be accessible to the College Trustees, professors, and students, and every facility extended for teaching practical fish-culture to the students of said College.

Trusting that yourself as Superintendent and your Board of Trustees will not find any legal impediment to prevent the granting of this request, I have the honor to be, etc.,

[Signed]

JOHN H. KLIPPART,

Secretary Board of Fish Commissioners.

Whereupon it was

Ordered, That the request of the Board of Fish Commissioners be granted on the terms therein specified, with the proviso that the site and general style of the building is approved by the Secretary of this Board, and the buildings be removed and this grant terminate at the demand and on reasonable notice of the Trustees of the Ohio Agricultural and Mechanical College; and it is further

Ordered, That the Secretary communicate to Mr. Klippart a copy of the above.

[The intent of the restrictions in the above order is to prevent any rude and unsightly building from being placed in a prominent and conspicuous position on the present main approach to the College, and the

power of terminating this grant is obviously proper, and in all other respects the Board are in hearty sympathy with the object of the request.]

The Board then passed the following preamble and resolutions relative to the High street improvement, and the Secretary was directed to publish the same in the city papers:

Whereas, citizens of Columbus, interested in extending the improvement of High street, have applied to the Trustees of the Ohio Agricultural and Mechanical College to assist in making said improvement along the eastern border of the College farm; and whereas the Trustees have given said application due consideration and examination, such as the great interests involved demanded, and they are constrained to say it is not within their power to give the asked-for aid; therefore,

Resolved, That, while recognizing the necessity and importance of any general improvement of High street, which will directly in the future enhance the value of the college grounds, the Trustees have neither the means nor the power to assist in such improvement.

Resolved, That the Ohio Legislature alone has the authority and the means to grant the requisite aid; and it would be a just and proper thing to contribute their proportionate share to an improvement which will add to the value of the college grounds, now the property of the State.

On a conference with the keeper of the boarding-house, it was represented that, owing to various circumstances, it was doubtful if he could continue the boarding-house to the end of the session without temporary aid; and whereas it would be inconvenient and impolitic to attempt a change at this time, it was, after due consideration of the facts,

Ordered, That the Secretary of the Board advance to Mr. Worlein the sum of \$150, taking a chattel mortgage as security for the payment of the same on or before April 1, 1876.

The money was advanced on the above order, and a chattel mortgage taken upon a horse and wagon.

It is hereby

Ordered, That the Secretary be directed to procure trees and shrubbery and plant the same on the College grounds; to paint and place a plain portico to the farm-house, and make such other improvements on the grounds as have been agreed on by the Board.

It having been represented to the Board that there was a necessity of completing certain work in the chemical department, and adding to the means of instruction in the zoological department, the Secretary was directed to proceed to carry out, as far as may be, the original plan from the unexpended balances originally placed under his direction for this purpose.

[Signed]

WARREN P. NOBLE,
Chairman pro tem.

COLUMBUS, OHIO, July 13, 1875.

The Board met this day at 2 o'clock P.M., and all the members being present, to wit, Messrs. Leete, Larwill, Noble, and Sullivant, the Board was called to order, and proceeded to business.

A letter and accompanying documents from Mr. Evans, an attorney-at-law at Portsmouth, Ohio, was laid before the Board, complaining of the action of our agent relating to certain tracts of land in the Virginia Military District.

After a full examination, discussion, and explanation from the President of the Board, it was unanimously

Resolved, That the charges appear to be a misapprehension, and the action of the President and agent seem to be without any just blame.

In the matter of certain fee-bills, presented by the Sheriff of Scioto county, it was

Resolved, That the matter be referred to our agent, William Leete, with a request to procure the whole of the cost-bills in the suits referred to, and transmit them to the Secretary of this Board, who, upon the certificate of said agent that they are just and proper, is hereby directed to remit the amount so found to the Sheriff of Scioto county.

In the matter of appointing an assistant teacher in the Department of Languages,

Resolved, That it be referred to the Executive Committee, who, at the opening of the next session of the College, if they deem such an appointment necessary, are hereby empowered to make it, at a salary not exceeding \$450.

The Board, after visiting the College and boarding-house, adjourned until 9 o'clock to-morrow.

WEDNESDAY, July 14, 1875.

Board met, at 9 o'clock A.M., and proceeded to business.

Mr. Larwill offered the following, which was adopted:

Whereas, Mr. Worlein, the present keeper of the boarding-house, has signified his desire to relinquish his lease, therefore

Resolved, That the President and Secretary are hereby directed to enter into contract with Walter Turner and George Engelke, leasing the boarding-house on such terms as may be agreed upon between the parties, and said Turner and Engelke giving a bond, with satisfactory security, in the sum of ten thousand dollars, for the faithful performance of the stipulations of said contract.

On motion, it was

Resolved, That no room in the College edifice shall hereafter be appropriated to the private use of any professor, without rent being paid therefor.

On motion of Mr. Sullivant,

Resolved, That the sum of \$50 is hereby appropriated for the purchase of maps, charts, etc., for the department of Ancient Languages.

Resolved, That the Executive Committee is directed to reduce, if practical, the running expenses of the gas and heating apparatus; and in doing so, they are hereby empowered to remove the janitor or other employes having charge, and to make such changes and appointments as they deem advisable.

On motion,

Ordered, That the Secretary is directed to settle the unpaid subscription of the Ohio Agricultural and Mechanical College to the High Street and College Railroad, by crediting Mr. Chittenden with said sum on his original and unpaid subscription to secure the location of said College, as was agreed and understood when the College subscribed to said street railroad; provided, said Chittenden produces a certificate from the engineer that said road is completed according to the ordinance authorizing said road.

Ordered further, That if after so crediting Mr. Chittenden on his subscription to the College there remains a balance in favor of said High Street and College Railroad, then the Secretary is directed to pay said balance by an order on our treasury.

On motion of Mr. Noble, it was

Ordered, That the Secretary is directed to make a call upon the former Executive Committee of this Board, the Superintendent of the College farm, and the former Superintendent of College buildings, for all books, papers, bills, accounts, or memoranda in their possession relating to any or all expenditures or accounts arising in the business of the Board and during the administration of said persons, in order that the same may be collated and preserved for easy reference, and help to show a detailed account of the expenditures of this Board in the purchase of the grounds and improvements thereon, the erection and equipment of the buildings, and all incidentals relating thereto.

It is further

Ordered, That heads of departments in the College are hereby required to furnish the Secretary, at the earliest possible day, with a complete and detailed invoice of all property, tools, implements, apparatus, and material of every kind, in charge of their department and belonging to the College, to be kept on file in his office for reference and examination.

The Board now adjourned *sine die*.

A true copy,

J. SULLIVANT, *Secretary*.

TREASURER'S REPORT.

COLUMBUS, OHIO, November 16, 1875.

HON. RALPH LEETE,

Chairman of the Board of Trustees of the O. A. and M. College:

DEAR SIR: I hand you herewith the fifth annual report of the finances of the College. This report is for the fiscal year which closed yesterday, being from November 16, 1874, to November 15, 1875, inclusive, and consists of three exhibits, as follows:

I. A general statement of cash accounts, showing the receipts, disbursements, and cash balance on hand this day.

II. A statement showing the condition of the several appropriations made by the Board of Trustees, the expenditures from each during the year, and the balances subject to draft at date.

III. A statement furnished by the Auditor of State, showing the condition of the Endowment Fund of the College invested in the faith of the State.

The three appropriations for "farm improvements, grading, fencing, repairs, preparing for botanic garden," for "grading and improving grounds," and for "improvements and repairs," have been consolidated into one account, and the balance of the appropriation for "electric clock and gong" has been merged in the appropriation for "furniture and apparatus for the College."

VIRGINIA MILITARY LAND SALES.

On the 6th of January last, by your direction, I receipted to Frank W. Armstrong, and on the 9th to William H. Leete, agents for the sale of lands in the Virginia Military District belonging to the College, for a large number of notes given by persons to whom sales had been made, and for various sums from ten dollars and forty-one cents upwards.

The notes received from Mr. F. W. Armstrong amounted to.....	\$8,254 23
And those from Mr. W. H. Leete to.....	13,542 73

Making a total of.....	\$21,796 96
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I have received from the proceeds of sales of Virginia

Military lands during the year (see *Detailed Statement*).. \$8,121 82

Of this sum there was received from sundry persons, chiefly from F. W. Armstrong, agent... \$3,476 38

For interest on above notes	372 81
	3,849 19

And on account of the principal of the foregoing notes.....	4,272 63
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Leaving a balance of the above *bills receivable* in my hands, in process of collection through banks, or in suit, of..... \$17,524 33

My cash account shows receipts during the past fiscal year, including a balance of \$2,437.77, amounting to.....	\$41,601 22
And disbursements for the same period amounting to.....	40,392 74

Leaving a balance of cash in my hands amounting to \$1,208 48

The statements to which I have referred, and which are presented herewith, are, I apprehend, sufficiently explicit to give you a correct understanding of the current operations of my department.

The detailed statements of receipts and disbursements for the year just closed are submitted herewith, for such reference as your Board may direct. The vouchers to support the disbursements are, for obvious reasons, retained for the inspection of the proper auditing committee of the Board.

I would again respectfully call your attention to the provisions of the act of the General Assembly referred to in my last report, as follows: Section 14 of the act to establish and maintain the College, passed March 22, 1870, requires, among other things in the annual report, "the amount of receipts and disbursements, and for what the disbursements were made; the number of professors, teachers, and other officers, and the position and compensation of each; * * * * an estimate of the expenses of the ensuing year," etc., etc.

The theory of the statute laws relating to the disbursement of public funds is, that there shall be annually published a detailed account. It is a very proper provision, running through all the State departments and institutions. I should not deem it necessary to refer to this matter again, only to relieve myself of any responsibility for the non-compliance with this requirement of the law heretofore. No statement in detail has been published since that contained in the first annual report. My second annual report, made equally in detail, was omitted altogether, only a brief abstract being published. This action prompted the remarks made upon page 28 of the third annual report, and substantially reiterated last year. I trust that the itemized accounts of receipts and disbursements may accompany the other documents and be published in the annual report, "according to law."

Having been six times unanimously chosen Treasurer of the College, without solicitation, and fully appreciating the dignity and honor thus conferred, I hereby surrender the office, with its pleasant associations and its responsibilities, and with the hope that I have measurably succeeded in discharging the trusts reposed in me honorably. My resignation is tendered to take effect at the expiration of my term, or upon the election and qualification of a successor.

I have the honor to be, very respectfully, yours,

HENRY S. BABBITT, *Treasurer.*

STATEMENT I.

A GENERAL STATEMENT OF CASH ACCOUNTS FOR THE FISCAL YEAR ENDING NOVEMBER 15, 1875

HENRY S. BABBITT, *Treasurer,*

In account with the Ohio Agricultural and Mechanical College.

DR.

1874—Nov. 15.	To balance of cash on hand.....	\$2,437 77
	For sundry amounts received as follows:	
	From State Treasury, on account of income of endowment fund, being proceeds of requisitions for \$27,000 made November 14, 1875, and \$2,000 of the requisition for \$10,000, made November 2, 1875, as per Statement III	\$29,000 00
	From students' term bills.....	1,440 50
	From rent of houses—	
	President Orton.....	\$280 00
	Prof. Townshend.....	50 00
	Prof. Mendenhall	87 95
		417 95
	From interest on bank account	183 18
	From proceeds of Virginia Military land sales...	8,121 82
	Total receipts during the year.....	39,163 45
	Total receipts, including balance.....	\$41,601 22

CONTRA, CR.

1875—Nov. 15.	By disbursements as follows, and as per detailed accounts submitted with vouchers:	
	For expenses of Trustees	\$334 35
	For current expenses, support and maintenance	27,897 22
	For farm improvements, grading and improving grounds, fences, repairs, and preparing for botanic garden	4,096 63
	For account of boarding-hall.....	97 50
	For account of main building and premises	917 47
	For furniture and apparatus for College	3,324 71
	For account of mess-hall or club-house	1,086 82
	For Neil avenue railroad (part)	1,200 00
	For amount due Sam. Kendrick, for land sold by mistake (\$350 also paid from miscellaneous fund).....	400 00
	For support of the library	500 00
	For maps, charts, etc., for department of Ancient Languages	38 04
	For miscellaneous expenditures (being \$150 paid A. Worlein and \$350 to S. Kendrick)	500 00
	Total disbursements for the year.....	\$40,392 74
	Leaving balance of cash on hand (in the designated depository).....	\$1,208 48

STATEMENT II.—APPROPRIATIONS.

A STATEMENT SHOWING THE BALANCES OF THE SEVERAL APPROPRIATIONS AT THE BEGINNING OF THE FISCAL YEAR 1875, THE AMOUNTS APPROPRIATED AND THE SUMS EXPENDED DURING THE YEAR, AND THE BALANCES REMAINING SUBJECT TO DRAFT AT THE END OF THE YEAR, NOVEMBER 15, 1875.

FOR WHAT PURPOSE APPROPRIATED.	Balances un- expended Nov. 15, 1874.	Appropriations made dur'g fis- cal year 1875.	Amount sub- ject to draft in 1875.	Amounts expended.	Balances sub- ject to draft Nov. 15, 1875.
Expenses of Trustees	\$334 35	.....	\$334 35	\$334 35	.....
Current expenses—for support and maintenance	4,027 34	\$30,000 00	34,027 34	27,897 22	\$6,130 12
Farm improvements—grading and improving grounds, fences, repairs, and preparing for botanic garden.....	5,883 87	.....	5,883 87	4,096 63	1,787 24
Boarding-hall	1,095 81	.....	1,095 81	97 50	988 31
Completion of main building and grounds	9,918 59	.....	9,918 59	917 47	9,001 12
Furniture and apparatus for College	5,997 98	.....	5,997 98	3 324 71	2,673 27
Mess hall or club-house.....	1,595 00	.....	1,595 00	1,086 82	508 18
Expenses of Commissioner to Washington	500 00	.....	500 00	.....	500 00
Neil Avenue Railroad *.....	.....	1,200 00	1,200 00	1,200 00	.....
To pay Mr. Haerline.....	.....	20 00	20 00	.....	20 00
To pay S. Kendrick for Virginia Military lands sold by mistake †	.....	400 00	400 00	400 00	.....
Library .....	.....	500 00	500 00	500 00	.....
Maps, charts, etc., for department of Ancient Languages .....	.....	50 00	50 00	38 04	11 96
Miscellaneous expenditures, not otherwise provided for by specific appropriation.....	.....	500 00	500 00	500 00	.....
Totals.....	\$29,352 94	\$32,670 00	\$62,022 94	\$40,392 74	\$21,630 20

* Remainder of subscription of \$3,000 paid by settlement of claim against H. T. Chittenden. † The sum of \$750 was paid, the balance being paid from appropriation for miscellaneous expenditures.

STATEMENT III.

A STATEMENT SHOWING THE AMOUNT AND CONDITION OF THE OHIO AGRICULTURAL AND MECHANICAL COLLEGE FUND, COMPUTED (BY THE AUDITOR OF STATE) UNDER PROVISIONS OF THE ACT PASSED FEBRUARY 10, 1870. (O. L., VOL. 67, PAGE 15.)

Amount of fund as principal, January 1, 1875.....	\$493,529 32
Add interest on same for six months, to July 1, 1875.....	\$14,805 85
Add proceeds of coupons of \$34,500 of the Franklin county Agricultural bonds, due March 15, 1875, at 7 per cent. per annum interest.....	1,207 50
Add interest on same to July 1, 1875, at 6 per cent. interest.....	21 13

Total additions first six months.....	\$16,034 51
Deduct for the same period payments by the Treasurer of State, as follows:	
Dec. 4, 1874... \$4,000 00...Interest to July 1, 1875..	\$137 33
Dec. 23, 1874... 3,000 00... " " " " " "	93 50
Feb. 1, 1875... 5,000 00... " " " " " "	125 00
Mar. 31, 1875... 5,000 00... " " " " " "	75 00
May 21, 1875... 5,000 00... " " " " " "	32 50
	<hr/>
\$22,000 00	\$463 33

Total deductions first six months..... 22,463 33

Net deductions July 1, 1875..... 6,428 82

Leaving amount of new principal, July 1, 1875.....	\$487,100 50
Add interest on same six months, to January 1, 1876.....	\$14,613 01
Add coupons of Franklin county Agricultural bonds, due September 1, 1875.....	1,207 50
Add interest on same to January 1, 1876.....	21 13

Total additions second six months	\$15,841 64
Deduct amount paid by Treasurer of State as follows:	
July 2, 1875.....	\$5,000 00
Interest on same to January 1, 1876.....	148 33
November 2, 1875 (on account of a requisition for \$10,000, leaving \$8,000 undrawn).....	2,000 00
Interest on same to January 1, 1876.....	19 33
	<hr/>
	7,167 66

Net additions second half year..... 8,673 98

Leaving amount of principal derived from proceeds of sale of land scrip, and accumulations thereto, to January 1, 1876.....	\$495,774 48
Upon this sum, interest at the rate of six per cent. per annum, compounded semi-annually, is payable under the laws of the State to the Treasurer of the College. In addition to this, a deposit was made in the State Treasury by the Trustees of the College, in compliance with the provisions of an Act passed January 20, 1871, of the seven per cent. bonds of Franklin county, Ohio, amounting to the sum of.....	34,500 00

Making an aggregate fund held by the State in trust for the College of \$530,274 48

The interest upon this sum, computed upon the above terms, for 1876, will amount to \$32,203.73, which amount will be payable during the year 1876, and as the Treasurer of the College has made requisition for only \$10,000 of the interest which was payable in 1875, there remains a balance of \$22,069 subject to future requisition, if it should be demanded.

The foregoing is a correct statement, and taken from the advance sheets of my annual report for 1875.

JAS. WILLIAMS, Auditor of State.
By HENRY S. BABBITT, Chief Clerk.

COLUMBUS, OHIO, November 16, 1875.

STATEMENT OF CASH RECEIVED—Continued.

Date.	From what source.	Amount.
1875.		
July 30	E. Simpson, note, \$178; interest, \$12.18	190 18
	Proceeds of J. Sullivant's draft on Kinney National Bank for \$916, for Virginia Military lands sold	453 83
Aug 27	W. Staley, note for \$24.50; interest, \$3.....	27 50
28	F. N. Beebe, interest on note.....	24 00
	F. W. Armstrong, agent, Virginia Military lands	\$74 92
Sept. 27	Students, term bills.....	327 75
30	" "	105 00
Oct. 12	Wm. Holton, note, \$57.56; interest, \$6.66	64 22
	Students, term bills.....	267 25
15	Wiley Austin, note, \$46.67; interest, \$5.51	52 18
18	Jones & Newman, note, \$76; interest, \$8.92	84 92
22	Hazelbacker & Hockaden, note	155 33
	" " interest.....	18 35
	Albert Dear, part of note.....	74 85
Nov. 1	John Williams, "	70 00
	P. O'Brien, "	39 85
2	Treasurer of State, income of fund	2,000 00
15	E. Carter, note, \$13.88; interest, \$1.52.....	15 40
	Prater Austin, note, \$16.67; interest, \$1.81	18 48
	F. W. Armstrong, agent, proceeds of note of J. M. Davidson, for land sale	13 18
	Interest on bank balances to date.....	64 17
	Total cash receipts, including balance November 15, 1874	\$41,601 22
	Total disbursements for same period, as per itemized account	40,392 74
	Leaving balance of cash on hand (in designated depository)..	\$1,208 48

MEMORANDUM OF ORDERS PAID BY H. S. BABBITT, TREASURER, FOR THE FISCAL YEAR ENDING NOV. 15, 1875.

No. of order.	Date.	To whom paid, and for what purpose.	From what appropriation.	Amount.
118	1874			
119	Nov. 18	Osborn, Kershaw & Co., curtains for boarding-house	Boarding-house.....	\$29 15
120		Franklin Machine Co., sundries for gas works.....	Current expenses.....	15 60
121	21	Joseph Trautman, work on heating apparatus.....	Main building	14 00
122		H. H. Parry, " "	"	39 75
123	23	Prof. A. H. Tuttle, salary for November	Current expenses.....	250 00
124	24	Prof. S. A. Norton "	"	250 00
125		Prof. R. W. McFarland, "	"	250 00
126	30	Joseph Sullivan, "	"	166 66
127	Dec. 1	President Edward Orton, "	"	350 00
128		Prof. N. S. Townshend, "	"	250 00
129		Prof. T. C. Mendenhall, "	"	250 00
130		Prof. Joseph Millikin, "	"	250 00
131		Prof. J. H. Wright, "	"	150 00
132		Thomas Mathew, "	"	60 00
133		Charles Babbitt, his own salary and fireman's wages	"	159 25
134	3	Thomas Mathew, materials for drawing department	"	15 00
135	4	H. W. Newell, new club-house.....	Club-house.....	500 00
136		Columbus Transfer Co., freight and drayage on radiators, etc	Main building.....	41 94
137	5	F. W. Foster, labor and materials in laboratory	"	37 40
138		same " " for heating apparatus	"	68 67
139		S. S. Martin, " " in laboratory	"	18 12
140	9	Aston, Taylor & Huff, stoves for students' rooms.....	Furniture and apparatus.....	254 50
141	16	U. S. Express Co., charges on package of drawing material	Current expenses.....	18 28
142	18	President Edward Orton, salary for December	"	350 00
143		Prof. T. C. Mendenhall, "	"	250 00
144		Prof. S. A. Norton, "	"	250 00
145		Prof. Joseph Millikin, "	"	250 00
146		Prof. N. S. Townshend, "	"	250 00
147		Prof. R. W. McFarland, "	"	250 00
148		Prof. A. H. Tuttle, "	"	250 00
149		Prof. J. H. Wright, "	"	150 00
150		Thomas Mathew, "	"	60 00
151		Charles Babbitt, his own salary and assistant's wages	"	160 00
	21	Jas. W. Queen & Co., apparatus, etc.....	Furniture and apparatus.....	291 02

152	22	H. W. Newell, new club-house.....	Club-house.....	500 00
153	23	Beckley & Allen, buggy and wagon hire.....	Current expenses.....	7 00
154	24	Thomas Mathew, materials for drawing department.....	".....	35 00
155		Prof. N. S. Townshend, Mr Harding's salary from October to January.....	Farm improvements, etc.....	250 00
156	29	Weinman & Son, steam pump and fixtures.....	Main building.....	344 78
157	30	Joseph Sullivant, salary for December.....	Current expenses.....	166 66
1875.				
158	Jan. 1	Henry S. Babbitt, one quarter's salary and expenses.....	".....	133 60
159	2	President Edward Orton, stationery and postage.....	".....	5 00
160	6	Henry T. Chittenden, street railroad.....	Neil Avenue Railroad.....	1,200 00
161	12	H. W. Newell, building club-house.....	Club house.....	65 00
162		Kilbourne, Jones & Co., hardware.....	Current expenses.....	19 06
163	13	Ralph Leete, advertising sale of Virginia Military lands.....	".....	12 50
164	14	Columbus Transfer Co., freight on boxes.....	Main building.....	7 23
165	23	Prof Joseph Millikin, salary for January.....	Current expenses.....	250 00
166		Richard Jones, balance in full for painting buildings.....	Farm improvements, etc.....	651 61
167	25	Chas. J. Wetmore, expenses to Washington on account of swamp lands.....	Current expenses.....	100 00
168	26	Ohio Furniture Co., apparatus and furniture for boarding-house.....	Furniture and apparatus.....	187 00
169		Null issued to S. Kendrick and taken up.....		
170		Prof. N. S. Townshend, salary for January.....	Current expenses.....	250 00
171	30	Prof T. C. Mendenhall, ".....	".....	250 00
172		Prof. A. H. Tuttle, ".....	".....	250 00
173		Prof. R. W. McFarland, ".....	".....	250 00
174		Prof S. A. Norton, ".....	".....	250 00
175		President Edward Orton, ".....	".....	350 00
176		Prof. J. H. Wright, ".....	".....	150 00
177		Thomas Mathew, ".....	".....	60 00
178	29	Charles Babbitt, ".....	".....	100 00
179	30	Prof. T. C. Mendenhall, apparatus and furniture.....	Furniture and apparatus.....	150 00
180	Feb. 5	William Larwill, prosecuting land claims.....	Current expenses.....	100 00
181		Alfred Ritson, material for use of departments.....	".....	38 61
182	6	Charles Babbitt, various items.....	".....	193 20
183	15	Joseph Sullivant, salary for January.....	".....	166 66
184		Prof. N. S. Townshend, farm improvement.....	Farm improvements, etc.....	1,254 66
185	19	J. Andrew, repairing pumps for boarding-house.....	".....	4 90
186		S. S. Martin, furniture.....	Furniture and apparatus.....	30 00
187	20	E. E. Corwin, cleaning and scrubbing new club-house.....	New club-house.....	11 32
188	22	Jesse Stone, furniture for boarding-house.....	Furniture and apparatus.....	36 22
189	25	J. M. Westwater, apparatus and furniture.....	".....	72 15
190	28	President Edward Orton, salary for February.....	Current expenses.....	350 00

MEMORANDUM OF ORDERS PAID, ETC.—Continued.

No. of order.	Date.	To whom paid, and for what purpose.	From what appropriation.	Amount.
	1875.			
191	Feb. 28	Prof. T. C. Mendenhall, salary for February,	Current Expenses	250 00
192		Prof. S. A. Norton,	"	250 00
193		Prof. Joseph Milliken,	"	250 00
194		Prof. N. S. Townshend,	"	250 00
195		Prof. R. W. McFarland,	"	250 00
196		Prof. A. H. Tuttle,	"	250 00
197		Prof. J. H. Wright,	"	150 00
198	26	Prof. Thomas Mathew,	"	60 00
199		Chas. J. Wetmore, expenses to Washington—ceded lands.	"	19 50
200	27	P. Hayden, coal for boarding-house.	"	80 00
201		Jas. W. Newman, advertising sale of Virginia military lands.	"	15 00
202	March 1	Charles Babbitt, salary and expenses.	"	154 75
203	4	Halley & Schwarz, work and material	"	28 75
204		John R. McDonald, livery	"	20 00
205	5	Samuel Kendrick, Virginia military lands.	Special, \$400; Miscellane's, \$350...	750 00
206	6	Joseph Sullivant, salary.	Current expenses	166 68
207	13	Thomas Mathew, apparatus.	Furniture and apparatus	25 00
208	20	William Holden, apparatus for zoological department.	"	25 00
209	22	Sereno Watson, No. 65, "Flora Braziliensis"	Library	14 60
210	25	Prof. T. C. Mendenhall, repairs on house.	Farm improvements, etc.	262 95
211	27	S. S. Martin, work on tables.	Furniture and apparatus.	20 62
212	29	President Edward Orton, salary for March.	Current expenses	350 00
213		Prof. T. C. Mendenhall,	"	250 00
214		Prof. S. A. Norton,	"	250 00
215		Prof. Jos. Milliken,	"	250 00
216		Prof. N. S. Townshend,	"	250 00
217		Prof. R. W. McFarland,	"	250 00
218		Prof. A. H. Tuttle,	" and hack hire (\$3.00).	253 00
219		Prof. J. H. Wright,	"	150 00
220		Prof. Thomas Mathew,	"	60 00
221	April 1	Aston, Taylor & Huff, apparatus, etc.	Furniture and apparatus.	49 35
222	2	Wm. T. Harding, three months' salary to April.	Farm improvements, etc.	250 00
223	3	Joseph Sullivant, salary and expenses.	Current expenses.	172 23
224	5	Charles Babbitt,	"	161 60

225		Columbus Gas and Coke Company, coke for gas-house	7 50
226	8	Sidney H. Short, apparatus	Furniture and apparatus.....
227	10	Comley & Francisco, expenses	Current expenses.....
228		Carl L. Mees, removing apparatus.....	Furniture and apparatus.....
229		American Naturalist, library	Library
230		Delaware Chair Company, furniture, etc.....	Furniture and apparatus.....
231	19	Slade & Kelton, apparatus, etc	4 74
232	30	Ralph Leete, expenses	Expenses Trustees.....
233		William Larwill, "	102 91
		same "	Current expenses.....
234		Charles Stodder, apparatus, etc	Furniture and apparatus.....
235		President Edward Orton, salary for April	Current expenses.....
236		Prof. T. C. Mendenhall, "	250 00
237		Prof. N. S. Townshend, "	250 00
238		Prof. S. A. Norton, "	250 00
239		Prof. R. W. McFarland, "	250 00
240		Prof. J. Millikin, "	250 00
241		Prof. A. H. Tuttle, "	250 00
242		Prof. J. H. Wright, "	150 00
243		Prof. Thomas Mathew, "	60 00
244		John K. McDonald, carriage and buggy hire	18 00
245		Charles Babbitt, his own salary and assistant's wages.....	190 00
246	May 1	Thomas Mathew, apparatus, etc	Furniture and apparatus.....
247		James W. Queen & Co., apparatus, etc.....	300 00
248		S. S. Martin work.....	Farm improvements.....
249	8	Charles G. Lord, library	Library
250	10	Columbus Transfer Company, removing apparatus	Furniture and apparatus.....
251	11	Albert Worlein, loan (continuing boarding-house)	Miscellaneous
252	13	Prof. R. W. McFarland, target staves	Furniture and apparatus.....
253	14	F. W. Foster, apparatus	40 00
254	19	Prof. A. H. Tuttle, salary	Current expenses.....
255	31	Henry S. Babbitt, expenses	28 47
		same microscope	Furniture and apparatus.....
256		Robert Clarke & Co., periodicals	Library
257		Joseph Sullivant, salary for April and May	Current expenses.....
258		President Edward Orton, salary for May	350 00
259		Prof. T. C. Mendenhall, "	250 00
260		Prof. S. A. Norton, "	250 00
261		Prof. J. Millikin, "	250 00
262		Prof. N. S. Townshend, "	250 00

MEMORANDUM OF ORDERS PAID, ETC.—Continued.

No. of order.	Date.	To whom paid, and for what purpose.	From what appropriation.	Amount.
	1875.			
263	May 31	Prof. R. W. McFarland, salary for May.....	Current expenses.....	\$250 00
264		Prof. J. H. Wright, ".....	".....	150 00
265		Prof. Thomas Mathew, ".....	".....	60 00
266		Charles Babbitt, salary and wages of fireman.....	".....	148 00
267	June 1	S. S. Martin, labor.....	".....	65 00
268	4	T. B. Potts & Sons, repairing roof.....	Farm improvements, repairs, etc..	132 62
269		Jed. Keeley, repairing and whitewashing.....	".....	27 50
270		Oscar Orlopp, subscription to Centennial Gazetteer.....	Library.....	5 00
271		R. G. Hanford, trees and shrubbery.....	Farm improvements, etc.....	167 70
272	5	F. W. Foster, work in chemical laboratory.....	Furniture and apparatus.....	133 00
273		J. A. Roberts, work on cases.....	".....	27 50
274		R. A. Roberts, ".....	".....	22 50
275	7	I. W. Lyon & Co., Hasting's Polar World, etc.....	Library.....	6 25
276	12	S. A. Buchanan, painting house, cases, etc.....	Farm improvements, etc.....	14 23
277		Prof. A. H. Tuttle, articles for zoological department.....	Furniture and apparatus.....	426 13
278		same expenses relating to same.....	".....	30 00
279	14	William Fairchild, barrel of high-wines for zoological department.....	Current expenses.....	83 13
280	19	Prof. J. Millikin, salary for June.....	".....	250 00
281	22	Pres. Edward Orton, ".....	".....	350 00
282		Prof. N. S. Townshend, ".....	".....	250 00
283		Prof. T. C. Mendenhall, ".....	".....	250 00
284		Prof. R. W. McFarland, ".....	".....	250 00
285		Prof. A. H. Tuttle, ".....	".....	250 00
286		Prof. S. A. Norton, ".....	".....	250 00
287		Prof. J. H. Wright, ".....	".....	150 00
288		Thomas Mathew, ".....	".....	60 00
289	24	S. S. Martin, furniture for College.....	Furniture and apparatus.....	30 00
290	26	S. A. Buchanan, repairs.....	Improvement and repairs.....	19 45
291		Julius Greenow, apparatus.....	Furniture and apparatus.....	90 50
292		Sunday Morning News, expenses of advertising.....	Current expenses.....	2 25
293	28	Kaiser & Bro., repairs to boarding-house roof.....	Boarding hall.....	25 10
294	29	Thomas Mathew, materials, drawing department.....	Current expenses.....	5 75
295		Dispatch Printing Co., advertising commencement exercises.....	".....	9 00
296	30	Columbus Door and Sash Co., dressed lumber for College.....	Main building.....	192 87

297		Joseph Sullivan, salary for June.....	Current expenses.....	166 66
298	July 1	G. W. Gleason, library.....	Library.....	367 80
299	3	S. S. Martin, carpenter's work in laboratory.....	Furniture and apparatus.....	35 00
300	5	Charles Babbitt, salary and expenses.....	Current expenses.....	163 42
301	6	President Edward Orton, expenses.....	".....	224 00
302		same.....	".....	23 45
303		J. L. Lott, music furnished.....	".....	33 00
304	12	Kilbourne, Jones & Co., hardware.....	".....	85 19
305	15	F. W. Merriek, copying and drawing up contract.....	".....	5 00
306	19	Samuel Buchanan, painting.....	Improvement and repairs.....	28 05
307	22	Nevins & Myers, printing 4,000 catalogues.....	Current expenses.....	195 00
308	26	Prof. N. S. Townshend, expenses.....	".....	200 00
309	28	F. W. Foster, carpentering.....	Furniture and apparatus.....	59 00
310	29	John Donlan, carriage hire.....	Current expenses.....	6 00
311	31	Prof. Asa Gray, subscription to Flora Brasiliensis.....	Library.....	15 00
312		B. Westerman & Co., department of ancient languages.....	Department ancient languages.....	38 04
313		Ohio Furniture Co., apparatus and furniture.....	Furniture and apparatus.....	30 00
314		S. S. Martin, ".....	".....	55 25
315		Charles Babbitt, salary.....	Current expenses.....	100 00
316	Aug. 1	J. Sullivan, ".....	".....	166 66
317	4	Door, Sash and Lumber Co., furniture and apparatus.....	Furniture and apparatus.....	58 98
318	6	McCune, Lonnis & Stoner, paints, varnish, glass, etc.....	Improvement and repairs.....	73 92
319	9	Prof. N. S. Townshend, advertising College in Ohio Farmer.....	Current expenses.....	39 00
320	10	F. W. Foster, apparatus and furniture.....	Furniture and apparatus.....	25 00
321		S. S. Martin, work in chemical laboratory.....	".....	10 00
322		(Not presented for payment).....		
323	18	Franklin Machine Co., repairs on boilers.....	Current expenses.....	5 85
324		George W. Gleason, expenses.....	".....	21 35
325	31	S. S. Martin, wages for August.....	".....	37 50
326	Sept. 4	James W. Queen & Co., apparatus for physical laboratory.....	Furniture and apparatus.....	400 00
327	20	J. Sullivan, salary.....	Current expenses.....	166 66
328	28	President Edward Orton, salary for September.....	".....	350 00
329		Prof. T. C. Mendenhall, ".....	".....	250 00
330		Prof. S. A. Norton, ".....	".....	250 00
331		Prof. Joseph Millikin, ".....	".....	250 00
332		Prof. N. S. Townshend, ".....	".....	250 00
333		Prof. R. W. McFarland, ".....	".....	250 00
334		Prof. A. H. Tuttle, ".....	".....	250 00
335		Prof. William Colvin, ".....	".....	250 00
336		Prof. J. H. Wright, ".....	".....	150 00

MEMORANDUM OF ORDERS PAID, ETC.—Continued.

No. of order.	Date.	To whom paid, and for what purpose.	From what appropriation.	Amount.
	1875			
337	Sept. 28	P. Hayden & Co., cost bills Virginia Military lands.....	Current expenses.....	271 38
338		Prof. Thomas Mathew, salary for September	"	60 00
339		Miss A. K. Williams,	"	45 00
340		Henry Chittenden, balance of subscription to Columbus Street Railroad	"	67 50
341		Kaiser & Bro., repairing College roof	Main building.....	87 41
342	29	L. S. Fisher, paving at College mess-hall	Club-house.....	10 50
343		James Clark, plastering at boarding-house	Boarding-hall	43 25
344	2	S. S. Martin, salary and expenses.....	Current expenses.....	85 88
345		E. E. Corwin, labor.....	"	15 00
346	Oct. 6	Prof. N. S. Townshend, nineteen head of cattle, for use.....	Farm improvements, etc.....	702 00
347	7	S. H. Parvin, advertising College in papers	Current expenses.....	126 35
348		Alfred Ritson, chemicals.....	"	23 21
349		Henry S. Babbitt, expenses	"	9 60
350	8	J. Sullivant, salary for September	"	166 66
351		Columbus Cabinet Co., furniture for physical laboratory	Furniture and apparatus.....	40 00
352	23	Julius Greenow, optical instruments for zoological department.....	"	12 50
353	27	A. E. Wilde, periodicals	Library, \$2.25, current ex., \$19 25..	21 50
354	28	James Clark, plastering and walling wells.....	Main building.....	30 25
355	29	President Edward Orton, salary for October.....	Current expenses.....	350 00
356		Prof. N. S. Townshend,	"	250 00
357		Prof. T. C. Mendenhall,	"	250 00
358		Prof. R. W. McFarland,	"	250 00
359		Prof. J. Millikin,	"	250 00
360		Prof. A. H. Tuttle,	"	250 00
361		Prof. S. A. Norton,	"	250 00
362		Prof. William Colvin,	"	250 00
363		Prof. J. H. Wright,	"	150 00
364		Thomas Mathew,	"	60 00
365		Miss Alice Williams,	"	45 00
366		S. S. Martin, wages for September	"	58 33
367	31	Door, Sash and Lumber Co., lumber	Farm improvements, etc.....	72 64
368	Nov. 2	S. S. Martin, expenses	Main building.....	35 05
369		F. W. Foster, work and materials	Improvements, repairs, etc.....	138 78

370		E. A. Fitch, coal	Current expenses.....	500 00
371		Joseph Sullivant, salary for October	"	166 66
372	13	Henry S. Babbitt, paid expenses of Trustees	"	137 75
Total disbursements.....				\$40,392 74

REPORT OF THE PRESIDENT.

HON. RALPH LEETE, *President of Board of Trustees:*

DEAR SIR: I hereby present my third annual report to the Board of Trustees, covering the year from November 15th, 1874, to November 15th, 1875.

During the past year the College has made noticeable progress in several directions.

1. Its faculty has been increased by the appointment of a professor of Political Economy and Civil Polity. In my last report I called attention to the omission from our schedule of studies of the sciences that pertain to *man*. The newly established professorship does much toward filling this important gap. If it shall be found practicable to add to it, at least temporarily, the subject of history, our most pressing necessities in this direction will be met. The several branches of metaphysical study remain unprovided for, it is true, but no instruction has thus far been required in them, and perhaps for several years to come the small amount of teaching needed in this department can be supplied from within the limits of the present Faculty.

To this new professorship has also been added the science of accounts. Thorough training in book-keeping, theoretical and practical, is now offered to all our students, with whatever adaptations are necessary for the several callings which they expect to pursue.

An additional instructor has also been provided in the department of Modern Languages, as the necessities of the department imperatively required.

2. The laboratories and cabinets of the College have been materially strengthened during the past year, as will be seen by subjoined professorial reports.

In conformity with legislative action, the valuable equipment of the chemical department of the recently completed State Geological Survey has been turned over to the College, and a very important addition has thus been made to the working facilities of our chemical and physical laboratories.

The Geological Cabinet, which is directly under my charge, has been largely re-enforced during the past year by various contributions, chiefly

from the coal and iron and building-stone interests of the State. Among the contributors, the following deserve special mention :

Steubenville Coal and Mining Co.....	G. W. McCook, Pres.
Spaulding, Woodward & Co.....	Steubenville.
Homer Hamilton, Esq.....	Youngstown.
Coal Ridge Salt Co.....	Pomeroy.
A. Wilhelmi, Esq.....	Canal Dover.
H. L. Chapman, Esq.....	Jackson C. H.
W. Q. Adams, Esq.....	Sciotoville.
M. F. Richey, Esq.....	Waverly.
Hon. Andrew Roy, Inspector of Mines.....	Columbus.
C. S. S. Griffing, Esq.....	Columbus.
John Short, Esq.....	Columbus.
Fish & Sons.....	Columbus.
Col. G. S. Innis.....	Columbus.

3. The number of students has been considerably increased. At the date of the last report, fifty-nine students were in attendance, representing twenty-two counties of the State. There are now ninety-nine (99) students, representing thirty-nine (39) counties. Their distribution is shown in the following list :

COUNTY.	No.	COUNTY.	No.
Ashland	1	Jefferson.....	1
Ashtabula.....	2	Lake	1
Belmont.....	1	Licking	1
Carroll.....	1	Logan.....	3
Champaign.....	3	Madison.....	3
Clarke	5	Meigs.....	3
Coshocton.....	1	Mercer.....	1
Crawford.....	2	Miami.....	2
Cuyahoga.....	3	Pickaway	2
Defiance.....	1	Portage.....	1
Erie.....	1	Richland.....	1
Fairfield.....	3	Ross.....	1
Fayette	1	Seneca.....	1
Franklin.....	58	Shelby.....	1
Gallia.....	1	Stark.....	1
Greene.....	2	Tuscarawas.....	1
Hamilton.....	4	Vinton.....	1
Hancock.....	1	Warren.....	1
Harrison.....	2	Wyandot.....	1
Highland.....	3		

The average age of our students is somewhat over eighteen years. Of the students now in attendance eighty (80) are males and nineteen (19) are females.

At the beginning of the present term, which was also the beginning of our third collegiate year, we examined on the College grounds fifty-five (55) applicants for admission. Of this number nearly fifty (50) were

found prepared to take up our work, and were accordingly admitted to the College.

During the last summer a system of county examinations was adopted, by which it was hoped at least to advertise the College in every county of the State. Some person in each county known to be interested in our institution, or presumed to be interested in the cause of education, was requested to advertise in the county papers an examination of candidates for entrance to the College—a small amount of money being forwarded to defray necessary expenses. Printed questions, enclosed in a sealed envelope, were also forwarded, the envelope not to be opened until the time of examination. The duties of the examiner were to see that the examination was fairly conducted, and to transmit the written answers of applicants to the College Faculty to be passed upon. Under this system, examinations were offered in almost all of the counties of the State, and in twenty counties candidates presented themselves. Of forty-three (43) applicants, forty (40) were found qualified, with sundry conditions, for admission, and were duly notified of the fact. Of this number, however, not more than twelve (12) have reported to the College, and perhaps not more than two or three of the twelve were attracted to the College by these examinations. In all of the other instances, students that had already decided to enter the College availed themselves of these local examinations as a matter of convenience. It cannot, therefore, be claimed that the new system has proved successful in the way of increasing our numbers, but it has called attention to the name of the College quite widely through the State, and the expense attending it may be charged to the head of general advertising. I invite the attention of the Board to this subject. If it shall be deemed best to give to the system a longer trial, it will undoubtedly be possible to increase its efficiency without increasing its expense.

To summarize the facts above given, we have examined within the last three months ninety-eight (98) candidates for admission to the College, ninety (90) of whom were found qualified to enter, and sixty-two (62) of whom have taken up our courses of study.

Under this head may be appropriately mentioned the fact that easy communication between the College and the centre of the city has been provided by the Neil Avenue Railroad for the last six months. A part of our increased numbers must be directly referred to these increased facilities of communication. It is easy to see that the College is to reap many advantages from being made more accessible.

The conditions of admission to the College remain unchanged. Entrance examinations are made in arithmetic, geography, English gram-

mar, and elementary algebra. I learn from various sources that complaint is sometimes made of the severity of our examinations in the common branches. I can assure the Board that such complaints are unfounded. Our examinations are real, but not severe. An inspection of the questions submitted will satisfy any one acquainted with school work at the present day that we ask as little as it is safe or wise to ask in these subjects. In regard to the requirement of elementary algebra, there is, perhaps, room for question, but I think it is the unanimous judgment of the Faculty that we cannot afford to dispense with this demand. The objection is, that this subject is not taught in our country schools. I answer that it *is* taught in the best of them, and, further, that a student who is really prepared in the common branches can easily secure, without a teacher, the amount of algebra required in our examinations. Candidates sometimes present themselves while deficient in this subject, but I have yet to find one student from the country who was adequately prepared in the common branches without at the same time having mastered as much algebra as we ask.

As it is, then, the requirement of algebra insures a little more maturity and training than we should get without it. We have made, in good faith, the attempt to take up the work of the common schools of the State where they leave it, but the most that can be asked of us is to adjust our demands to the better grades of these schools. The standard of teaching and scholarship in many of them is deplorably low. If we should open the College doors to all comers, without examination, we might easily multiply our numbers, but we should certainly do this at the expense of the very service with which we are specially charged. In such a case we should be forced to adopt one of two courses, which are, perhaps, equally objectionable. If, in the first place, we should meet the actual needs of these untrained and half trained students, we should be obliged to form classes in arithmetic, grammar and geography, or, in other words, to organize a good common school in the College, diverting a considerable part of our income for tuition in branches for which the State is already spending annually more than seven millions of dollars; or, in the second place, if we should admit these students, unprepared as they are, to the study of the higher branches, we should inevitably lower the tone of all our work, and render it impossible to establish or maintain any high or thorough scholarship.

I repeat, then, that we require for admission just as little as can be safely asked. We are honoring the office of the common schools in demanding that the work which they present shall be well and thoroughly done. It may even result that such tests of their work will react in

some small degree upon these schools, leading them to a higher standard of teaching and efficiency.

It will be seen that a good measure of interest and success in study for the past year is reported by the several professors. A system of term examinations is in force that makes it necessary for every student to maintain a fair rank in scholarship, in order to hold his place in his class or in the College.

The courses of study that were adopted during the first year of the College organization prove quite as satisfactory as could be expected. The plan which we are following was drawn up to meet the necessities of such students as the College seemed likely to attract, and no essential modification has been rendered necessary in our experience thus far.

I am happy to report that the order of the College has been in the main satisfactory. To the students occupying the College dormitory a large measure of liberty is accorded, and there are doubtless occasional abuses of this liberty, but no system is able to forestall the waste of time and opportunity.

All available work on the farm and grounds is eagerly sought by the students. Some of them defray a considerable part of their expenses in this way, and are thus able to pursue an uninterrupted, instead of a broken course of study. It will not be possible to furnish work to all who apply, as our numbers increase, unless the system of land tillage pursued shall be so modified as to require a larger amount of labor. I am aware that this subject is beset with grave practical difficulties, but the advantage named above, as well as that of keeping up or establishing the habit of out door work, seem to me important enough to demand some thought and to warrant some experiments.

I venture to call your particular attention to one of the most urgent needs of the College at present—a need which is expressed in almost every one of the appended department reports. It is the want of works of reference in our library which the student can consult in pursuing his investigations. A very timely and serviceable addition was made last year to the library, chiefly in the line of miscellaneous works designed for the literary culture and recreation of the students. If even an equal appropriation can be made this year for the purpose named above, it would do something toward meeting a deficiency that is seriously felt in almost all of our departments, and that must impair the quality of the work that we do.

I beg leave to state once more the necessities of the Geological Museum in the way of wall and table cases. During the past year I have unpacked and arranged on rough, temporary tables, a large amount of

material illustrating the economical geology of Ohio. It is safe to say that so full and satisfactory an exhibition of the mineral wealth of the State has never been made before. Every leading coal seam of the State is represented, and most of the seams by specimens from all of the principal mining centers. Our native iron ores are shown in full force, and also all of the foreign ores that are worked in Ohio. Almost every furnace of the State is represented by a full suite of specimens. The fire-clay and building-stone interests are equally well represented. It is very easy to supplement such a collection as this, until it shall become a complete epitome of our geological resources. As has been stated on a previous page, very considerable additions have been made to the collection during the past summer. This material is principally derived from the collection of the recently completed State Geological Survey, which was turned over to the College by act of the Legislature. The Trustees of the College have looked upon the gift as incomplete, unless provision should also be made for its proper display. They accordingly requested the last Legislature to supplement the gift by the appropriation of the small sum necessary to provide suitable cases. No such appropriation was ordered. If it seems useless to make further demands upon the Legislature, I trust that adequate provision will be made by the Board of Trustees for the preservation and utilization of this very valuable and instructive collection.

To the subjoined department reports I add a detailed statement of the organization and present equipment of the College, with a list of the students in attendance during the past year; but you will allow me to remark that no statements of this kind convey to the general reader an adequate idea of what our real capabilities for educational service are. It is our constant experience that those who visit the College are surprised at the extent of its accumulations in the way of laboratories and cabinets, and our most serviceable advertising comes from the voluntary tributes which such visitors pay. One of the sessions of the Ohio Editorial Convention of last June was held in our building, and the College is certainly under great obligations to its members for the appreciative and generous notices which they spread through the State. A large increase of interest in the College is to be looked for, now that the ready communication between it and the centre of the city is finally established. We may expect that members of the Legislature and visitors to the Capital will henceforth acquaint themselves more fully with its real aim and scope. It is to interest aroused in such ways that we may confidently look for an increase of patronage that shall be commensurate with our deserts.

I am convinced that the title of the College is, to a certain extent, a

misnomer, and a temporary hindrance, at least, to its success. The legal name is a long and cumbrous one, and in practice it is almost always reduced by the omission of the latter and less known element in it. What an *Agricultural College* is, or should be, many people think that they know, and many are sure, without further question, that such an institution can render no service in an educational way that they desire; while others, who compare our scheme with their own preconceived notions of the proper curriculum for an *Agricultural College*, are prompt to charge our enterprise with failure or unfaithfulness.

I will not reopen the vexed question as to what sort of institutions the National grant, on which the Ohio Agricultural and Mechanical College rests, was designed to establish. The organic law, unfortunately, is not free from ambiguity, or, at least, diverse constructions have been put upon it by equally sincere and zealous friends of industrial education; but it seems clear to me that, in the protracted discussion of these terms, the general interpretation given by your Board has carried the day. The Ohio Agricultural and Mechanical College is a *scientific school, liberal in its character and practical in its aims*. To the view that the munificent grant referred to was designed to lay such foundations, the United States Commissioner of Education, in a recently published report, gives his unqualified support. This testimony is all the more weighty, from the fact that he may be considered in some sense, an official expounder of the legislation in question. "There seems," he remarks, "to be in the popular mind a misapprehension of the scope of the law of 1862, providing for the establishment of these institutions. * * * *What was demanded for our country was * * a class of schools combining in their curriculum means for thorough education in the sciences, both theoretical and applied, and in all the elements of true modern culture. Such appears to have been the intention of the act of 1862. Its spirit was broad and liberal, excluding nothing which experience has shown to be valuable in modern education, while expressly providing for means of scientific instruction in agriculture and the mechanic arts.*"

If with our present organization our present name is retained, we shall slowly educate the people of the State to understand what such a name can appropriately cover, and the final result may be entirely satisfactory; but if a shorter and less misleading designation should be adopted, we shall perhaps reap some immediate advantage.

I should be sorry to be misunderstood in these criticisms upon our present title. It seems to me to be an object greatly to be desired, that closer connection should be established between the scientific training and the varied phases of the practical life of the present day. I am sure

that I can safely say, that both Trustees and Faculty look with special favor on those features of our institution which promise to make it subserve the great industrial interests of the State—in agriculture, in the mechanic arts, in manufactures, and in mining enterprises. So far from wishing to render such features less prominent, I should eagerly welcome additions to our present courses that would increase our capabilities for practical service; for I am sure that it is to our facilities for giving a thorough and *practical scientific training* that we must look for our largest usefulness and our largest favor with the public. The only object which I have in view in the suggestions just made is to save the College from raising illusive expectations, and in this way drawing upon itself the distrust or ill will of any class of our citizens.

With great respect,

Very truly yours,

EDWARD ORTON.

COLUMBUS, OHIO, *November 15, 1875.*

DEPARTMENT REPORTS.

PHYSICS AND MECHANICS.

EDWARD ORTON, A.M., *President*:

MY DEAR SIR: I have the honor to submit the following report of the department of Physics and Mechanics for the past year:

Within the year about sixty different students have attended recitations in this department. About thirty-eight are at present at work, a great majority of whom are in the elementary course. The wisdom of the present arrangement of the course of study is shown in the increased value of the work done by the laboratory classes. It would be desirable to require a still higher degree of preparation for admission to the course of one year. The work accomplished by the students in this course has been quite satisfactory; the comprehensive text-book in use and the complete apparatus for illustration enable us to reach, in one year, a tolerably thorough discussion of the various divisions of the subject.

Perhaps the greatest interest is centered in the work done by the classes in the laboratory. It may be said that the establishment of working laboratories in Physics and Mechanics in this country, or indeed any where, is quite recent. It is a work attended with considerable difficulty, and an expense greater than many have supposed. Apparatus suitable for illustration is totally inadequate for purposes of precise measurement and investigation. To obtain results of value, instruments of precision are absolutely necessary. Instruments of this class are unavoidably expensive; so much so as, in general, to preclude the possibility of the possession of more than a single one of each kind. This increases the difficulty of managing a class of even ten or twenty students, and, in addition, it may be said that there is published no text-book or guide suitable to be placed in the hands of the student, every laboratory requiring a guide adapted to its own facilities and resources. I have endeavored to supply this want, as far as possible, by the preparation of manuscript notes for the use of the students. This has required, for the first year or two, much time and labor, but the results have been, in the main, satisfactory.

At present eight students are working in the laboratory; each spending two hours every day and as much time outside as is necessary to bring up text-book work. Three of these are now engaged upon electricity. The study of electrical measurement, of the construction and use of batteries, etc., has been carried on quite successfully.

The laboratory is fortunate in the possession of an excellent set of galvanometers and instruments for measurement, including a Wheatstone's reflecting instrument and a Siemens's universal galvanometer. The students are becoming quite ready and accurate in the use of these instruments. A short experimental telegraph line has been erected, without expense to the College, and the officers of the Western Union Telegraph Company in this city have been ever ready to extend assistance to us in our work in this department.

I would recommend, both as a valuable addition to our appliances and a safe-guard to the College in case of fire, the extension of this line to the center of the city. It could be done at small cost, and the expense of its maintenance would be slight. Two of the students are engaged in the experimental demonstration of the laws of acoustics. We have a tolerably complete set of apparatus from Koenig, of Paris, which is excellent as far as it goes. The work which they have thus far accomplished has been carefully and accurately done.

Two are occupied in the study of optics. They have finished, thus far, a discussion with measurements, of the action of mirrors and lenses, and a successful study of the indices of refraction and dispersion of various substances.

Another is at work upon heat. A number of careful determinations of the co-efficients of expansion of solids, liquids, and gases has been made, and during the year a table of the tension of steam at various temperatures has been worked out from actual experiments and curves of tension constructed; also a thorough study of radiant heat by means of the apparatus of Melloni. Heat, especially in its bearing upon the subject of steam, is certainly one of our most important studies, and it would be well if our resources in that direction were somewhat increased.

In Mechanics, a class was engaged during a large portion of the year in the study of a text-book, accompanied by experimental proofs, of the laws of dynamics and statics, and an investigation in the laboratory of the strength of certain materials and simple structures. In the study of the steam-engine, facilities have been offered by the Trustees of the city water-works. Students from the laboratory made the observations upon the pumping-engines during the duty test, carried out last spring, under the direction of the Superintendent, the results of which are published

in the last annual report of the Trustees. These students thus acquired a practical knowledge of the mode of testing large engines not easily obtained in any other way. A few instruments are greatly needed for the study of mechanics; a Richards indicator and a testing-machine would be especially valuable. With the latter a great variety of results could be obtained, which would be of permanent value.

In conclusion, for illustrative teaching we are quite well supplied in most respects; much, however, is needed in the way of instruments of precision, suitable for laboratory work, which will, I hope, in time, be obtained for the department. Nearly all of the older institutions of learning, as well as most of the younger, are recognizing the importance of this kind of work, and are hastening to supply themselves with the necessary appliances. We can not afford to be behind them in this respect. To maintain our position will require a judicious expenditure of money, from time to time, in sums not necessarily large, which I hope the Trustees may be able to grant this department. A very pressing need at present is the purchase, for the College library, of a few books of reference, for the use of the students.

I am, respectfully, yours,

T. C. MENDENHALL,
Professor of Physics and Mechanics.

CHEMISTRY.

COLUMBUS, OHIO, November 15, 1875.

EDWARD ORTON, PH.D., *President:*

MY DEAR SIR: I have the honor to present this my third annual report of the department of Chemistry.

The progress of the classes in Chemistry during the past year has been, on the whole, satisfactory. The students in analytical chemistry rather surpassed my expectations, doing more work than I had anticipated, and deserving praise for their accuracy and thoroughness. The class in general chemistry entered upon their labors with an insufficient preparation, and were, for this reason, unable to go over as much ground as I desired. Nevertheless, I have reason to think that the most of the class have been profited by the study and have attained a fair degree of proficiency in the science. I suppose that had it been possible, nearly all of the class would have continued the study in the analytical laboratory; but some, through a pressure of other work, have been obliged to defer this for the present.

In this current year we have six students in analytical chemistry, who are doing faithful and intelligent work. I could easily have increased this number had I not believed that it is best for the students to be well grounded in pure chemistry before attempting the practical.

The present class in general chemistry numbers twenty-two. I am happy to say that the average grade of preparation is better than that of the preceding class, and for this reason hope for better results at the end of the year.

Much progress has been made in the equipment of the department during the past year. It has received an increase of valuable apparatus from the late Ohio Geological Survey Corps. Additional work has been done in fitting up the laboratory; new desks and cases have been set up; a large steam-chest a sand-bath, and two foul gas hoods have been provided, and other minor details have been furnished to increase the working capacity of the laboratory.

The collection of specimens illustrating the application of chemistry to the arts has received important additions. We owe our hearty thanks to numerous friends for their kindly assistance. Dr. William Judkins has given his personal attention to the securing of specimens from various manufactories in Cincinnati, and will continue his good work for us during the coming year. Among those who have contributed to this "industrial museum" are Messrs. Westwater & Co., Osborn, Kershaw & Co., and Hoster, of Columbus; S. D. Horton, of Pomeroy; Messrs. W. H. Doan, Rose & Prentiss, Strong & Cobb, Meriam & Morgan, and the Standard Oil Co., of Cleveland; James L. Clark, Tempest, Brockmann & Co., Allison, Johnson & Smith, of Cincinnati. I have promise of other specimens, and feel encouraged to expect a gradual accumulation of valuable and interesting material. In behalf of this collection, I renew my request for the purchase of a small suite of the more important minerals and ores.

The wants of the department are not many, and can be supplied without a large expenditure of money. Among these wants are a few of the conveniences mentioned in my last report, which have not yet been furnished. I am firmly persuaded that we shall need another desk at the beginning of the next collegiate year. We shall also need to purchase a few chemicals and a little glassware, of the sort which the students require in the analytical laboratory. The only additional item which need to be mentioned in this report is a small library for the daily reference of our students in chemistry. By the kindness of Mr. J. H. Klippart, a beginning has been made toward forming such a reference library. He has contributed a number of agricultural reports, containing

valuable essays on topics relating to chemistry. I have placed on the shelves duplicates from my own library, and have besides loaned other books to the students as they have needed them for special work. Quite recently I have removed a small portion of my scientific library from the College buildings, including in it Watt's Dictionary of Chemistry. This valuable work ought to be constantly accessible to our pupils, and I respectfully ask that seventy-seven dollars be appropriated for its purchase. I shall endeavor to secure an increase of books suitable for our purposes, and hope to accomplish this largely by gift.

I am gratified to be able to add, that the co-operation of all the students in this department is so cheerful and hearty as to leave nothing to be desired.

Very respectfully yours,

SIDNEY A. NORTON,
Professor of Chemistry.

ENGLISH AND MODERN LANGUAGES AND LIBRARY.

EDWARD ORTON, *President*:

DEAR SIR: I respectfully submit the following report upon the department of English and Modern Languages and the College Library:

To meet necessities set forth in my report of last year, the Board of Trustees appointed Miss Alice Williams as tutor in the department. Thanks to this re-enforcement, it is fully organized according to our published programme, and is, I believe, in good condition. Miss Williams, I am happy to state, is meeting every requirement of her position to my entire satisfaction. That our liberal provision for the studies of the department meets no imaginary need, is indicated by the fact that of the whole number of our students over one-half are pursuing at least one of these studies, and one-third two of them.

To teach English, French, and German philology, with not a text of the earlier or middle period (save the one read in the class-room) accessible to the student, is like teaching geology without a fossil, or surveying without a compass. And the common editions of even such authors as Chaucer and Shakespeare are so modernized and sophisticated by successive generations of editors and printers as to be useless for purposes of critical study, linguistic or literary. Like others of the Faculty, I gladly loan books of my own not needed for daily reference, but such loans are expensive and inconvenient to the teacher, and wholly inadequate for a class's needs. I therefore earnestly recommend an appropriation for the purchase of at least the following works:

Turner—History of the Anglo-Saxons.

Freeman—History of the Norman Conquest.

Grein—Edition of Layamon.

Morris—Edition of Chaucer.

Dyce—Edition of Shakespeare.

Morris and Skeat—Specimens of Early English.

Wackernagel—Deutsches Lesebuch.

Wackernagel—Alt-franzosisches Lesebuch.

Littre—Dictionnaire Français.

Brachet—Dictionnaire Etymologique.

Skeat—Edition of Marlowe.

Morris—Edition of Spenser.

Whilst these books are of the highest value for general students, I ask for them especially as *apparatus and material* for my department—apparatus and material as properly so called as are microscopes, minerals, air-pumps, or blackboards.

In the consideration of this recommendation, it will be remembered, I hope, that my department has cost nothing whatever for outfit specially for its own use, the few maps bought two years since being used in other departments also.

Our nucleus of a library is being more and more used, and is helping to cultivate a love of solid reading, which its scanty resources can not satisfy.

So great were the demands upon the funds of the College for the equipment of the College in other and indispensable things, that the Trustees have not heretofore felt justified in appropriating any thing for the increase of the library. How much can be wisely done now in this direction, of course only the Board can determine. Thanks to a few individuals, we have two very remarkable collections of mostly continental literature; the one on botany; the other on entomology. May the example of these donors find many imitators! But nothing can more directly increase the teaching power of the Faculty, or the culture, general and special, of the students, than an appropriation as liberal as possible for library purposes. Our text-books, class-room teaching, and formal lectures in our respective branches, all refer to authorities and treatises for the needed supplementing and illustrating of our instruction that our shelves do not contain, and thus the facilities of the College are not so fully utilized as they would be with the aid of a working library. The matter is one deserving, I venture to urge, of the most serious consideration.

Yours with great respect,

JOSEPH MILLIKIN,

Professor of English and Modern Languages, and Librarian.

THE COLLEGE, November 18, 1875.

AGRICULTURE AND BOTANY.

EDWARD ORTON, PH.D., *President* :

DEAR SIR: In compliance with your request, I submit the following report of what has been done during the past year in the departments of Agriculture and Botany :

Students of Agriculture devoted the first term of the College year to the study of domestic animals, their varieties, special adaptations, and management. The second term was occupied with the study of diseases to which domestic animals are subject, attention being particularly directed to the symptoms, causes, nature, and discrimination of disease, and to the action of medicines. Through the third term the forms of disease most frequently met with in Ohio were made the subject of study. Cases of disease were carefully examined, when opportunity was found, in the vicinity.

Assistance from this department has in several instances been solicited by the owners of stock, when their animals were affected with diseases, the nature of which was regarded as obscure. A disease of sheep, popularly known as white-skin, which has prevailed in Licking county, and in other parts of the State, was carefully examined and found to depend on the presence of immense numbers of parasitic worms (*Strongylus filaria*) in the small air passages. So far as is known, the natural history of the parasite was made public, together with an effectual remedy against its ravages. A troublesome and very persistent cough affecting a number of horned cattle in the vicinity of Columbus, and in other places, was studied by means of examinations of the affected animals after death. The cough was found to be but a symptom of tubercular consumption, a disease that justifies all reasonable measures for its prevention, but does not very well reward any effort at cure. The hog cholera has also received attention, and many animals, both living and dead, were inspected, and valuable conclusions reached on points relating to the nature of the disease and its treatment. Detailed statements of these and other investigations of the kind have been published in the report of the State Board of Agriculture, where they are accessible to farmers, the class specially interested. It may not be out of place here to suggest that such investigations, if carefully and skillfully conducted, can scarcely fail to be of great advantage to the State. One of the present needs for successful veterinary teaching in the College is a more complete pathological collection.

On the College farm, during the past summer, experiments have been made with manures, on different quantities, and kinds of seed, and also

in under drainage. These are not yet complete, or ready to be reported, which is, perhaps, the less to be regretted from the fact that the past season here was so exceptionally wet that it is doubtful if any satisfactory conclusions have been reached.

Structural botany was begun by a large class, at the opening of the second and continued into the third term. After structural botany, systematic botany was pursued to the end of the year. The indigenous flora of the region, which afforded full occupation to the class through the season, was pretty thoroughly examined, and a good degree of interest in botanical studies awakened.

Plant-houses, a botanic garden, and an arboretum will add greatly to the interest and success of this department, as we trust will be seen in the near future.

Respectfully yours,

N. S. TOWNSHEND.

MATHEMATICS AND ENGINEERING.

COLUMBUS, OHIO, November 3, 1875.

To the President of the O. A. and M. College:

SIR: The branches taught in this department last year were algebra and geometry, both elementary and advanced, trigonometry, mensuration, surveying, navigation, analytical geometry of two and of three dimensions, descriptive geometry, and the differential and integral calculus.

There was also extensive field practice with the compass, transit, level, and plane table. A number of the students can readily and accurately execute almost any kind of work in ordinary engineering.

Since the last report there has been no addition to the apparatus of the department; the wants are, therefore, the same as those named in that report, and need not be restated.

R. W. McFARLAND.

LATIN AND GREEK.

COLUMBUS, OHIO, November 15, 1875.

EDWARD ORTON, PH.D., *President:*

DEAR SIR: I have the honor herewith to transmit to you my third annual report for the departments of the Latin and Greek Languages.

In my report for 1874, and in the last College catalogue, is given an outline of the courses of study pursued in these departments during the academic year 1874-5. These courses of study aim to present the equiva-

lent of the amount of Latin and Greek usually regarded as necessary for the degree of Bachelor of Arts in the better colleges of the country. From the table given below it will be seen that a good portion of the students of the College have pursued the studies thus prescribed.

COLLEGE CLASSES.

1874-5. SECOND AND THIRD TERM.

<i>Latin and Greek</i> —First year's class.....	4
<i>Latin and Greek</i> —Second year's class.....	1

1875-6. FIRST TERM.

<i>Latin</i> —First year's class.....	8
Second year's class.....	3
	—11
<i>Greek</i> —First year's class.....	4
Second year's class.....	2
	— 6

In addition to the College classes mentioned above, advanced preparatory classes were continued throughout the academic year 1874-5. The members of all these classes have, in general, done their work with commendable zeal and uniform success.

The Board of Trustees in July, 1875, appropriated fifty dollars for the purchase of additional maps and charts for the use of these departments. A portion of this sum was expended, and the following illustrative material procured: Rheinhard's Album of Classical Antiquities, wall-maps of Athens and of Rome, Kiepert's Environs of Rome, and Atlas von Hellas, Ernst Curtius's Sieben Karten von Athen, with a few photographs of antique statuary. These appliances make an important addition to Kiepert's large wall-maps of the Roman Empire of Greece, and of Italy, which have been for some time the property of the College. A beginning has been made of a museum to illustrate ancient art and life, composed as yet only of small models, constructed under my direction, of the Greek theater, the Homerich house, etc.

The needs of the departments of Latin and Greek Languages at present are mostly of books of reference for the use of students; standard and complete editions of the classical authors, histories, large dictionaries of biography, mythology, geography, and antiquities; works on ancient literature, life, and art. Until books of this character are put within reach of the students, it is impossible for them to make even respectable attainments in classical scholarship. I would respectfully suggest, and strenuously urge, the appropriation of the sum of at least two hundred dollars for the immediate purchase of a carefully made assortment of standard philological and classical books. These would, of course,

form a part of the College library, and thus be of permanent and general value both to students and faculty.

With great respect, your obedient servant,

JOHN H. WRIGHT,
Assistant Professor.

ZOOLOGY.

OHIO AGRICULTURAL AND MECHANICAL COLLEGE,
COLUMBUS, OHIO, *November 15, 1875.*

EDWARD ORTON, PH.D., *President:*

DEAR SIR: I have the honor to submit the following report of the department of Zoology and Comparative Anatomy and Physiology:

Since my last report many additions have been made to the equipment of the department, by which its efficiency has been greatly increased.

The material now available for the use of students in this department, may be briefly stated to consist of upward of three thousand specimens and preparations, illustrating every class in the animal kingdom, save two of the smallest and least important, and every order in each of the more important classes. This material includes skeletons, both mounted and disarticulated, stuffed animals, dry and alcoholic specimens, dissections in alcohol, models, etc. The large majority of the skeletons, and many of the stuffed specimens, are the superior work of Ward, of Rochester; the anatomical preparations in alcohol are chiefly the work of the writer. Many such will be added to the collection during the current year.

The specimens so far procured from other sources have been chiefly such as contribute to the first of the two proposed collections mentioned in my last year's report, viz., the synoptical collection, intended for the systematic representation of the animal kingdom as a whole. Upward of a thousand specimens have been collected by the writer during the past year, chiefly of entomological material, calculated to contribute to the second of the collections mentioned in my former report, viz., that one intended to represent, as fully as possible, the zoology of the State of Ohio, and especially the animals that are noxious or beneficial to man. The department is under special obligations to the Secretary of the Board of Trustees of this institution for the loan of a fine collection of shells, and for collections made by him during the past summer in its behalf; to Mr. A. Freed, of Lancaster, for a large and varied collection of the animals of Fairfield county; to Mr. William Deshler, of this city, for the gift of two cases of stuffed birds, chiefly of this vicinity; to Prof.

William Colvin, of this College, for a full series of Ohio mollusks: and to a number of students in the College for collections made at their homes during the past year. In this connection I would say that it is proposed to make this collection as full and complete as possible, and to that end the friends of the College, in every county of the State, are earnestly requested to make full collections of all their native animals, including those that appear to them most common or most unimportant.

The suggestions made in last year's report concerning the needs of the department in its anatomical and physiological work has been in great measure adopted. Orders have been given for a number of microscopes, some of which have been already received. When the full number ordered shall have been completed and delivered, we shall have in the College, and available for students' use, ten stands, and upward of twenty objectives, by the leading American and European makers. An order has also been sent for a large number of the elastic models of Auzoux. Owing, however, to the excess of the demand for his work beyond the power of his establishment to supply, none of these have as yet been received; but I trust that before the end of another year this institution will enjoy facilities for teaching the structure and functions of the human body second only to those possessed by medical colleges, and for teaching its relations in structure and function to the lower animals, superior to those possessed by the majority of such institutions.

It will, I trust, not be inappropriate for me to give a brief synopsis of the work of the department done in the last college year, or doing in the present. Last year the number of students electing the elementary zoology of the introductory course was two; the number registered this term is *twenty*. In each class the object in view has been to impart to the mind of each student such an idea of the great types of the animal kingdom as may be obtained from the direct study of a few animals representing each group, using books only as auxiliaries to such study. There were twenty students last year in elementary physiology; thirty have been registered this term. The text-book used is Cleland's *Animal Physiology*. One student elected the advanced course in zoology last year; six have done so this year. Their time is chiefly spent in laboratory study of animals, as in the elementary class; but more time is spent and more exhausted study given to each group, especially those that are of practical importance. There was a class of six students in anatomy last year, the majority of whom were farmers' sons seeking to gain information concerning the anatomy of the domestic animals. The work of this class was chiefly done in the dissecting-room connected with the department. Two of the class spent their whole time throughout the

year in dissecting the domestic animals alone. This year there has been no class in anatomy organized, its place being taken by an advanced class in physiology. Dalton's Physiology (6th ed.) is used as a text-book. During the coming term this class will receive, along with its other work, practical instruction in the use of the microscope, particularly in the study of the tissues. Since the beginning of the current term over fifty per cent. of the students registered have entered one or another of the classes of this department.

A word as to our more immediate needs. With the exception of the microscopes already referred to, no provision has as yet been made for laboratory instruction in physiology. I would, therefore, beg leave to renew my suggestion of the propriety of making such provision for thorough laboratory work in this science as will enable students who may elect it as a special study to become accurate and original investigators as readily and efficiently as in the departments of physics and chemistry. The practical value of such training will, I trust, be self-evident.

I would like, also, to renew the suggestion made last year, that a sum, definite even though small, be set apart, the income of which shall be available for the current expenses of the department, subject to the approval of the proper authorities. The State and economic collection proposed must necessarily be of slow growth, and there may occur, at any time, opportunities to make valuable additions to it, at moderate expense, provided there is a fund that may be counted on for that purpose. There is also a constant consumption of material going on in the laboratory, which should be as constantly replaced.

There is need, also, for provision for the purchase of a number of standard works upon zoology and comparative anatomy, which ought to be accessible to students of these sciences, and which none of the libraries open to them in and around Columbus contain.

All of which is respectfully submitted.

ALBERT H. TUTTLE,
Professor of Zoology.

POLITICAL ECONOMY, CIVIL POLITY, AND ACCOUNTS.

EDWARD ORTON, A.M., *President Ohio Agricultural and Mechanical College:*

DEAR SIR: I here present the report of the above department for that part of the first term of this present college year which has passed:

The department was organized and went into operation at the beginning of the college year, in September last, and opened with fifteen students in the studies of Political Economy and Civil Polity, and thirty-five students in the study of Accounts.

At the beginning our work was somewhat incommoded by the want of proper writing desks, which was soon remedied by a good outfit of desks and chairs, and ample provision of blackboards in the class-room.

The classes have, under the circumstances, made a commendable progress in the several branches of study.

The instruction in the department of Political Economy and Civil Polity has been chiefly by written and oral lectures to the class, followed by exercises and questions requiring written answers traversing the subjects presented in the lectures. Considering the nature of the subjects, and the youthful minds engaged in the study, the success is not unsatisfactory. Abundant illustration has been found exceedingly useful.

In the course of study adopted in the department of Accounts, the class was furnished with descriptions of the books commonly in use, and has been taught to rule and prepare the various forms in use.

A series of rules of accounts, applying the laws of double-entry book-keeping, with the descriptions of the uses of the different books, was placed upon the blackboards and the students were required to copy them into their note-books for study and reference. This has been followed by the practical work of opening and writing up a set of books, illustrating a general mercantile business, the examples and illustrations being adapted to familiarize the student with the details of business, as well as give instruction in the principles of accounting. This has been accompanied with oral instructions and explanations, and descriptions of commercial instruments and operations.

The chief need of this department is a supply of the literature of the subjects of Political Economy and Civil Polity in the College library. The judicious expenditure of a few hundred dollars in the purchase of the standard works treating on these subjects would greatly advance the interests of these studies, especially for those students who manifest especial interest in them.

Very respectfully yours,

WILLIAM COLVIN.

MECHANICAL AND FREE-HAND DRAWING.

COLUMBUS, November 3, 1875.

EDWARD ORTON, *President of the Ohio Agricultural and Mechanical College:*

SIR: The interest in this department has been maintained by the students during the year; very fair improvement is being made, and in some instances it is very marked.

Instruction has embraced the following subjects: Mechanical draw-

ing from model machines; India ink drawing and lettering, for those who contemplate engineering and surveying as professions; water-color botanical drawing; lithographic drawing and printing; pictorial, lithographic transfer writing and printing; photography from nature, and photographic printing; also linear perspective for out-door sketching.

In lithographic drawing and photography, some very pleasing pictures have been executed by the students.

Our hours of teaching are arranged to suit the time of the students without interfering with the necessary preparation for their imperative studies.

Diagrammatic work in oil colors has been done for the Chemical and Geological departments; also in lithography for Physics and Chemistry, lithographic examination papers for Zoology and Latin and Greek.

We are in want of more advanced drawing studies (lithographed), either English, French, or German, a few good plaster casts of animals, some of the human figure, from the antique, an anatomical human figure, a box of water-colors and brushes, also a box of mathematical instruments, some frames and glasses for the exhibition of work done in the room, and for specimens of the different kinds of engraving, etchings and lithography, printing, etc., now in use; also a case for the students' drawing materials, etc.

A knowledge of applied art is becoming a necessity in connection with the educational institutions of the present day. The thronged art halls of our State and county fairs, industrial exhibitions, etc., are an evidence of improved popular taste, developed by the dissemination of good printed pictures at a trifling cost. Our students, whom we may reasonably expect will, in the future, be connected with such art displays, should be able to distinguish one kind of picture from another, and have at least a theoretical knowledge of the mode of production. As a pleasant accomplishment, drawing is very desirable, but the ability to draw, in connection with professions or mechanical trades, in money value can hardly be over-estimated.

The stages of instruction should embrace mechanical and machine drawing, linear perspective, details of architecture and ornaments from copies, free-hand drawing from copies of objects, flowers, foliage, natural history, domestic animals, the human figure, etc.,; drawing from plaster casts, shading from the round, sketching from nature, and painting in oil and water-colors.

"A taste for the fine arts is no plant of the desert, that will spring up unheeded and spread its blossoms where there is none to enjoy its fragrance, nor a sturdy weed that can struggle into vigor through rubbish

and neglect; it is a plant whose seeds will remain inert until called into life by culture, and will spread its luxuriance exactly in proportion to the care taken of it."

Respectfully submitted,

THOMAS MATHEW.

FACULTY.

EDWARD ORTON, PH.D.,

PRESIDENT, AND PROFESSOR OF GEOLOGY.

T. C. MENDENHALL, A.M.,

PROFESSOR OF PHYSICS AND MECHANICS.

SIDNEY A. NORTON. A.M., M.D.,

PROFESSOR OF GENERAL AND APPLIED CHEMISTRY.

JOSEPH MILLIKEN, A.M.,

PROFESSOR OF THE ENGLISH LANGUAGE AND LITERATURE, AND OF THE FRENCH AND GERMAN LANGUAGES.

NORTON S. TOWNSHEND, M.D.,

PROFESSOR OF AGRICULTURE.

R. W. McFARLAND, A.M.,

PROFESSOR OF MATHEMATICS AND CIVIL ENGINEER, AND INSTRUCTOR IN MILITARY TACTICS.

JOHN HENRY WRIGHT, A.B.,

ASSISTANT PROFESSOR OF THE LATIN AND GREEK LANGUAGES.

ALBERT H. TUTTLE, M.Sc.,

PROFESSOR OF ZOOLOGY AND COMPARATIVE ANATOMY.

WILLIAM COLVIN,

PROFESSOR OF POLITICAL ECONOMY AND CIVIL POLITY.

THOMAS MATHEW,

INSTRUCTOR IN FREE-HAND AND MECHANICAL DRAWING.

ALICE WILLIAMS,

ASSISTANT IN DEPARTMENT OF MODERN LANGUAGES.

JOSEPH MILLIKEN, A.M.,

LIBRARIAN.

ORGANIZATION AND EQUIPMENT.

The Ohio Agricultural and Mechanical College is founded on the Congressional land grant of July, 1862. By that act a large amount of the public land was turned over to the several States, the proceeds of the sales to be devoted to the better education of the industrial classes. The share of each State was proportioned to its representation in the National Legislature, and thus six hundred and thirty thousand acres came into the possession of Ohio. This munificent gift was unfortunately pressed for sale upon a temporarily overstocked market, and the State realized only fifty-four cents to the acre. The total amount of the sales (\$342,450) was, however, put at interest, and when the College was opened in September, 1873, the principal and interest together constituted a productive fund of something over \$500,000, the annual income from which slightly exceeds \$30,000.

The Legislature having passed an act to authorize the several counties of the State to raise money to secure the location of the College, an offer of \$300,000 from Franklin county was accepted by the Board of Trustees, and the College was permanently located at Columbus. The money furnished by Franklin county has been mainly expended in the three following items: 1. The purchase of a valuable farm of three hundred and twenty acres within the corporate limits of the city of Columbus. 2. The erection of a spacious and elegant College building and two dormitories for students. 3. The equipment of the various departments of instruction in the College.

The value of the College farm has been greatly enhanced since its purchase by the rapid growth of the city in its direction. As land is rated and sold on all sides of it, it is now worth at the lowest calculation double the amount paid for it, or not less than \$350,000.

The Legislature has also turned over to the College the proceeds arising from the sale of various tracts of unsurveyed lands within the Virginia Military District, and it is hoped a considerable amount will ultimately be realized from this source.

The total value of endowment and property at the present time exceeds \$1,000,000.

The organization of the College has been effected in strict conformity

with the provisions of the law to which it owes its foundation: these provisions demanding an institution in which "the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, * * * in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

The departments already established, and the provisions made for giving instruction in them, are as follows:

I. PHYSICS.

For this subject, which is universally recognized as one of the branches particularly related to agriculture and the mechanic arts, and, indeed, of fundamental importance in the study of either, ample provision has been made in the equipment of the institution. It is safe to say that, in the opportunities afforded for thorough study in this department, the College already surpasses most of the institutions of the country. Its laboratory is supplied with expensive and well-selected apparatus, designed not only for illustration, but also for original research in all the leading divisions of the science. Students are directed to its use in the way of investigation as soon as they are properly prepared to undertake such work.

The subject of Practical Mechanics is at present connected with the professorship of Physics. Instruction will be furnished in the principles and uses of machinery, and also in its construction, and in mechanical drawing.

Attention is invited to the great advantages offered in this department of study by the varied and extensive applications of machinery to be found in the city of Columbus. Access to the leading shops and factories is secured for students of the College, and, in several establishments, facilities for conducting practical experiments have been generously put at the disposal of members of the Faculty. The value of such opportunities to the classes in Mechanical Engineering can not well be overrated.

II. CHEMISTRY.

In the line of studies for which the national grant aims to provide, Chemistry demands an equally prominent place with the department already named, and ample facilities are furnished for its study in the equipment of the College. A well-arranged laboratory, supplied with the best appliances for practical work, has been provided at a large expense. In addition to this, the College has come into possession, by act of the Legislature, of the valuable apparatus used by the chemical de-

partment of the recently completed State Geological Survey. It, therefore, possesses every thing requisite for the most thorough examination of coals, ores, clays, cements, limestones, and soils, and also for gas and water analyses.

The course in Analytical Chemistry provides full instructions in all departments of the science. In connection with the ordinary work of Qualitative Chemistry, the student is taught the use of the spectroscope and of the blow-pipe in Determinative Mineralogy.

The course in Quantative Chemistry includes both the volumetric and gravimetric methods. The student will also be assisted in any special branch of the science that he may desire, and take up in detail topics which relate to Pharmacy, Medicine, Agriculture, and other sciences in which the principles of chemistry are applied.

Superior advantages are offered to the student in Theoretical and Applied Chemistry. A lecture-room, furnished with all needful appliances and apparatus for illustration, has been provided, and a museum of Industrial Chemistry has been begun. The aim is to collect in this museum all available material for the illustration of lectures upon the applications of Chemistry to the arts and to manufactures, and in this work considerable progress has already been made.

Full suites of specimens, to illustrate the manufacture of iron, glass, leather, paints, and pottery, have been secured; also for the distillation of coal oils, for the preparation of India rubber, etc., etc.

III. ZOOLOGY.

The subject of Zoology, as its growing importance well deserves, has been assigned to a distinct professorship, and means have been provided for making the instruction in this subject thorough, practical, and extensive. A large amount of material, selected with special reference to its availability in teaching, has already been accumulated. The cabinet contains—

1. Skeletons representing all the orders of vertebrates (with a single exception), and most of the important sub-orders.
2. Alcoholic and dried specimens representing every class, the leading sub-classes, and most of the important orders of invertebrates.
3. The beginning of a collection of the animals of Ohio.
4. Skeletons of the domestic animals.
5. Alcoholic, injected, and microscopic preparations for the illustration of the anatomy and histology of man and lower animals.

Auzoux's complete manikin (life size), and a full set of his models illustrating the anatomy of man and the domestic animals, have been ordered, but owing to delay in the manufacture have not yet been received.

A dissecting-room, with abundant material for the thorough study of veterinary anatomy, is also furnished, while for practical training in microscopy there have been supplied eight microscope stands, representing all the principal modes of construction, and nineteen objectives, giving powers up to 2,500 diameters.

IV. BOTANY.

Permanent provision has not yet been made for this subject, but the Professor of Agriculture will give instruction in it for the present. By the will of the late William S. Sullivant, Esq., the ample library of this distinguished botanist has come into possession of the College. It contains not only all of the standard treatises on the subject, but many very rare and valuable works—as the *Icones Muscorum*, the *Flora Brasiliensis*, etc., etc. An herbarium, representing quite completely the flora of Ohio, is accessible to the student, and charts and models illustrating vegetable structures are provided.

V. GEOLOGY.

The College is able to present unusual advantages for the study of Geology—especially for the study of Ohio Geology. By act of the Legislature, it has been put in possession of all the collections made by the State Geological Survey during its five years of service, and these collections have been supplemented by valuable additions of fossils and minerals from various sources. The State collection embraces a very complete representation of every geological formation shown in Ohio, both in respect to lithological characters and fossil contents. It includes many of the type fossils figured in the two volumes of Paleontology of Ohio already published.

In the department of Economic Geology the collection is especially rich. In the first place, it contains specimens of all the coals, ores, clays, cements, limestones, and soils that have been submitted to chemical analysis during the progress of the survey. These analyses, as is well known, have brought to light many facts of great importance in regard to the mineral resources of Ohio, and the specimens from which these results were obtained are accordingly invested with permanent interest and value.

In the second place, the collection furnishes a very full exhibition of all the economical products of our geological scale. Every coal seam mined in the State is represented—the more important ones by numerous specimens. The iron ores are shown in full variety. Nearly all of the furnaces of Ohio are represented—some of them by products alone, but

more than half by full metallurgical series—embracing ores, fuels, fluxes, cinders, and products. The leading building stones of the State are all represented, and also cements, fire-clays, and brick and pottery clays in great numbers. So large and varied a representation of the mineral wealth of the State has never before been got together.

The central position of Columbus is also to be named among the advantages which are here offered for the study of the geology of the State. By a few short excursions it is possible for the student to make himself practically familiar with every element in the geological series of Ohio, both as respects stratigraphical order and fossil contents.

VI. AGRICULTURE.

The department of Agriculture, which also includes the *diseases of animals* and their *medical and surgical treatment*, is provided for in a distinct professorship, the aim of which is to acquaint the student with the theory and practice of a truly rational system in this most important field.

The college farm, which contains nearly 320 acres, and which affords a great variety of soils and exposures, must be counted as the chief and sufficient dependence of the department in the way of illustration. It is to be used for practical experiments in the various branches and operations of agriculture which are pursued in the State.

From the preceding statements, it will be seen that all of the departments already named are in some measure tributary to this. The student of veterinary science, for instance, finds in the zoological cabinet and laboratory the means for gaining the thorough knowledge of the anatomy of the domestic animals which is essential to their surgical treatment, and, in a similar way, the chemical, physical, and geological laboratories furnish parts of the agricultural course.

VII. MATHEMATICS.

In this department the full course of College Mathematics is provided for, and with it the subject of Astronomy is also included. The professorship is also made to cover extended and thorough courses in Surveying and Civil Engineering. The best facilities for teaching these branches are afforded. A full set of instruments of the finest construction, including transits, level, plane-table, belongs to the department, and nothing is lacking that is necessary for the training of the student in the most skillful and accurate ways of executing work. Field-work is extensive and varied.

VIII. ENGLISH, FRENCH, AND GERMAN LANGUAGES.

In the organization of the College, special prominence is given to the modern languages. Some of the students who resort here will study no language but their own, and it is, therefore, imperative that the opportunities for training in English should be made ample, while all who expect to attain any good degree of proficiency in the natural sciences must certainly acquaint themselves with French and German.

The course of study in the English Language and Literature has been made especially complete—as full and thorough as any offered in the colleges of the country. Rhetorical training of all students in the regular courses is also included here.

French and German can be pursued in courses as extensive as the needs of the students may require.

IX. LATIN AND GREEK LANGUAGES.

Ample provision is also made for the study of the Latin and Greek languages, not only in compliance with those terms of the organic law of the College which forbid the exclusion of classical studies, and which declare one of the aims of institutions thus endowed to be “the liberal education of the industrial classes,” but also because of the great advantage which such study gives in acquiring a thorough knowledge of our own and other modern languages; and in the last place, but not the least important, because of the relations which they bear to literary, historical, and scientific studies.

X. POLITICAL ECONOMY AND CIVIL POLITY.

During the past year the professorship of Political Economy and Civil Polity was filled, and instruction in this most important class of subjects began at the opening of the present collegiate year, September, 1875.

The science of Accounts has also been assigned to the professor in the above named department, and students can now acquaint themselves thoroughly not only with the theory of Book-keeping, but also with such practical applications of it as are best suited to the callings which they expect to follow.

XI. MECHANICAL AND FREE-HAND DRAWING.

Instruction in these subjects has been provided for in the College, and all needful facilities are furnished by which those who wish may acquire skill in the several departments of Drawing.

Practical lithography and photography are also taught in this department, all the necessary apparatus being placed at the student's disposal.

XII. HISTORY.

No department of history has yet been established, but temporary provision has been made for giving elementary instruction in it within the limits of the present Faculty. The President gives instruction in General History, the Professor of Modern Languages furnishes a resume of French and German History, and the Professor of Latin teaches in his classes Grecian and Roman History.

The objects and facilities of the College have been indicated, in part at least, in the preceding statements. It will be seen that, in respect to equipment, the College takes high rank, furnishing unusual advantages in almost every branch of science.

The objects of the College, briefly stated, are—

1st. *To furnish a general education by which the youth of Ohio shall be fitted "for the several pursuits and professions of life."* The sciences that bear on practical life are to be made especially prominent in this education, and for such branches the College is bound to make ample provision; but no departments of study that enter into a well-balanced scheme of general training are to be purposely excluded from it.

2d. *To provide opportunities for those who wish to pursue special studies.* A student may have but a year at his command, and this he may wish to devote chiefly to some particular science. He may have already acquired a practical knowledge of agriculture, or of some one of the mechanic arts, and may wish to spend his time upon the branches that underlie these callings respectively. To all such students the College offers signal advantages.

The objects of the College will, however, be more fully set forth under subsequent heads.

DEGREES AND COURSES OF STUDY.

Three degrees are offered by the College, viz., Bachelor of Arts (B.A.), Bachelor of Science (B.S.), and Civil Engineer (C.E.). In addition to these degrees, certificates for work done in the several departments will be granted, as hereafter stated.

REQUIRED COURSE.

For students who desire to complete a full course of study, and to receive any of the degrees of the College, the following general scheme has been established: When admitted to the College they shall enter upon a prescribed course of study, which occupies two years. The aim has been to include in this two years' course those branches of which no educated person can afford to be ignorant, and at the same time to lay a popular foundation for all subsequent study. This course is constituted as follows:

FIRST YEAR.

First term—Human Physiology, English Language, Algebra.

Second Term—Physical Geography, Structural Botany, English Language, Geometry.

Third Term—Physical Geography, Systematic Botany, Algebra.

SECOND YEAR.

First term—Physics, Chemistry, Zoology.

Second Term—Physics, Chemistry, Geometry.

Third Term—Physics, Chemistry, Plane Trigonometry.

History throughout the year.

It is believed that when the student has completed the above named course, his judgment and taste will be so formed that he can decide intelligently upon the particular line in which his study shall henceforth lie. A large liberty is therefore accorded to him in his subsequent college work.

SUPPLEMENTARY COURSES.

The remaining studies of each department of the College, with the exception of mathematics, are thrown into two-years' courses of daily recitations, and six of these courses (or their equivalents) are necessary for graduation.

Furthermore, the departments of the College are divided into three schools, termed respectively,

I. *The School of Exact Sciences*, embracing Mathematics, Civil Engineering, Physics and Mechanics, Chemistry.

II. *The School of Natural History*, embracing Botany, Zoology, Geology, and Agriculture.

III. *The School of Letters and Philosophy*, embracing the English Language and Literature, German Language and Literature, French Language and Literature, Latin Language and Literature, Greek Language and Literature, Political Economy and Civil Polity.

The only restriction upon the liberty of the student in the remainder of the courses is that one of the six required courses shall be taken from each of the schools above named.

If he is a candidate for the degree of B.A., the remaining three courses shall be selected from each of the schools above named.

If a candidate for the degree of B.S., he must make his selection of the three additional courses from Schools of Natural History and Exact Sciences.

If he seeks the degree of C. E., he must take the studies of the School of Exact Sciences. One year in each of two courses may, with permission of the Faculty, be counted an equivalent for a two years' course in one. Six of these courses will, with three daily recitations, occupy four years. If the number of daily recitations is increased, the time occupied for the completion of the work assigned will be correspondingly reduced.

The range of instruction proposed in the several departments can be learned from the appended statements.

THE SCHOOL OF EXACT SCIENCES.

MATHEMATICS.

ONE YEAR.

First Term—Surveying, Spherical Trigonometry, Navigation.

Second Term—Analytical Geometry of two dimensions.

Third Term—Astronomy.

CIVIL ENGINEERING.

FIRST YEAR.

First Term—Surveying, Spherical Trigonometry, Navigation, Descriptive Geometry.

Second Term—Analytical Geometry of two and of three dimensions, Isometric Drawing, Spherical Projections.

Third Term—Astronomy, Shades, Shadows, Perspective.

SECOND YEAR.

First Term—Differential and Integral Calculus, locating and constructing Roads, Railroads, etc.

Second Term—Mahan's Civil Engineering, Strength of Materials, etc., Geodesy.

Third Term—Bridges and Bridge Drawing, Stone-cutting, Walls, Arches, etc.

Text-books.—The works of Loomis on Algebra, Geometry, Trigonometry, Analytical Geometry, Astronomy, and Calculus. In parts of the course, work by Davies, Warren, Church, Gillespie, Mahan, Haupt, Worthen, and others.

The parts of Chemistry and Physics especially pertaining to Civil Engineering are studied under the direction of the professors in those departments.

Students are taught and practiced in the use of the transits, level, plane-table, globes, and other astronomical apparatus. They are also taught to determine latitude, the variation of the magnetic needle; and, in general, all practical field-work pertaining to engineering.

PHYSICS AND MECHANICS.

FIRST YEAR.

First Term—Mechanics.

Second Term—Acoustics and Optics.

Third Term—Optics.

SECOND YEAR.

First Term—Heat.

Second Term—Heat and Electricity.

Third Term—Electricity.

There will be, in addition, an advanced course in Mechanics, comprising one year of laboratory work in the Mechanics of Solids, Liquids, and Gases, Strength of Materials, Elements of Machines, etc., combined with the study of Statics and Dynamics, and including the last year of the course in Physics.

Throughout the whole course the work will be very largely done in the laboratory, and opportunity will be afforded for special study in any direction coming within the range of the department.

Text-books.—Deschanel's Physics, Todhunter's Mechanics, Stewart's Heat, Maxwell's Theory of Heat, Pickering's Physical Manipulations, Kohlrausch's Physical Measurements.

CHEMISTRY.

FIRST YEAR—THREE HOURS A DAY.

First Term—Qualitative Analysis: Reactions of Single Bases and Acids, Exercises in Blow-pipe and Flame Reactions.

Second Term—Qualitative Analysis continued: Determination of Mixtures, Blow-pipe Mineralogy. Quantitative Chemistry begun.

Third Term—Quantitative Analysis.

SECOND YEAR—THREE HOURS A DAY.

Quantitative Analysis: Special studies in Chemistry applied to Pharmacy, to Agriculture, to Manufactures, and to the Arts.

Text-books.—Bloxam's Chemistry, Fownes's Chemistry, Galloway's Qualitative Chemistry, Will's Qualitative Chemistry, Fresenius's Quantitative Chemistry, Caldwell's Agricultural Chemistry.

Books of Reference.—Watt's Dictionary of Chemistry, Gmelin's Hand-book of Chemistry, Wagner's Chemical Technology, Graham-Otto's Chemie, Rose's Analytischen Chemie, Gorup-Besanez's Physiologischen Chemie, Brush's Determinative Mineralogy.

THE SCHOOL OF NATURAL HISTORY.

BOTANY.

FIRST YEAR.

First Term—Structural and Physiological Botany.

Second Term—Structural and Physiological Botany.

Third Term—Systematic Botany. (Phænogamia).

SECOND YEAR.

First Term—Systematic Botany. (Gramineæ and Cryptogamia).

Second Term—Economic Botany, or Botany as applied to the Arts.

Third Term—Economic Botany, as applied to Garden, Field and Forest Culture.

Text-books and Books of Reference.—In required course: Gray's Lessons and Gray's Manual. In supplementary course: Gray's Botanical Text-book, Loudon's Encyclopedia of Plants, Paxton's Botanical Dictionary, Lowe's British Grasses, Berkeley's Cryptogamic Botany, Cooke's Hand-book of British Fungi, Darlington's American Weeds and Useful Plants.

ZOOLOGY AND COMPARATIVE ANATOMY.

The wants of students entering this department are found to vary to such an extent in relation to each individual's plans for the future, that four separate years of study are presented, any two of which will be received as equivalent to one of the two-years' courses referred to on page 72. They are as follows:

A. ZOOLOGY.

First Term—Vertebrates.

Second Term—Arthropods, Mollusks, Echinoderms.

Third Term—Worms, Coelenterates, Protozoa.

The first term will be given to the study of the more familiar animals, particularly those of our own State; especial attention being paid to the important subject of Fish Culture, for which provision will be made during the present year; the second term will be largely given to the study of the structure and life-history of Insects; and the third in great part to the study of the Parasitic Worms—both topics of the greatest practical importance.

The work of this year will be by laboratory exercises, accompanied with lectures.

B. VETERINARY ANATOMY.

This year will be almost entirely devoted to practical work in the dissecting-room upon the anatomy of the domestic animals; all the smaller animals, such as the sheep, pig, dog, etc., being carefully dissected by the student—especially those parts most liable to injury or disease—while the horse and ox will be dissected whenever opportunity offers.

Chauveau's Anatomy of the Domestic Animals is used as a manual.

C. COMPARATIVE ANATOMY.

This year will be given to a study of the Anatomy of Vertebrates, with special reference to light thrown upon it by Human Anatomy.

Mivart's Anatomy is used as a text-book, while the work will be fully illustrated by the synoptical series of skeletons in the museum of the department, a complete man-ikin, and frequent dissections and demonstrations of the soft parts of the lower animals.

D. PHYSIOLOGY.

This year will be devoted to recitations from Smith's-Marshall's Physiology, lectures upon embryology, and a course of practical instruction in the use of the microscope.

Students having in view merely the acquirement of a general education, would be recommended to make their course of the first and fourth of these years; those purposing to follow agriculture would be recommended to the second and fourth; while those who wish to prepare themselves to enter the practice of medicine would be recommended to the third and fourth.

In the required course Cleland's Animal Physiology and Nicholson's Zoology are used as text-books.

The following works, among others, will be used as books of reference in the subjects of Zoology and Comparative Anatomy: Chauveau's Anatomy of Domestic Animals, Flower's Osteology of Mammals, Owe's Anatomy of Vertebrates, Huxley's Anatomy of Vertebrates, Parker's Monograph of the Shoulder-Girdle, Owen's Anatomy of Invertebrata, Packard's Guide to the Study of Insects, Dana's Crustacea, Cobbold's Entozoa, Woodward's Mollusca, Agassiz's Contributions to Natural History, Dana's Zoophyta, Pritchard's Infusoria, Carpenter's Foraminifera, Todd's Cyclopedia of Anatomy.

GEOLOGY AND PALEONTOLOGY.

FIRST YEAR.

First Term—Physiographic and Lithological Geology.

Second Term—Dynamical Geology, Historical Geology, including the Elements of Paleontology begun.

Third Term—Historical Geology completed.

SECOND YEAR.

First Term—Economical Geology, Building-stones, Limestones, Cements, Ores, etc., with special reference to the mineral resources of Ohio.

Second Term—Economical Geology continued, Coal, Petroleum, Salt, etc.

Third Term—Relations of Geology to Agriculture.

Text-books and Works of Reference.—Dana's Manual of Geology, Lyell's Student's Elements of Geology, Lyell's Principles of Geology (11th edition), Vogt's Lehrbuch der Geologie, Nicholson's Manual of Paleontology, Geological Reports of Ohio and other States.

AGRICULTURE.

FIRST YEAR.

First Term—Soils: Their Composition and Adaptations, Pastures, Meadows, Field Crops, Manures and Fertilizers.

Second Term—Tillage, Draining, Irrigation, Roads, Fences, Buildings, Implements, and Machinery.

Third Term—Orchards, Vineyards, Gardens, Hedges, Forests, etc.

SECOND YEAR.

First Term—Domestic Animals, Varieties, Adaptations, and Management; Wool-growing; the Dairy.

Second Term—Diseases of Animals—Medical and Surgical treatment.

Third Term—Diseases of Animals—Medical and Surgical treatment.

THE SCHOOL OF LETTERS AND PHILOSOPHY.

ENGLISH LANGUAGE.

FIRST YEAR.

First Term—Anglo-Saxon—March; Anglo-Saxon Reader, Lectures on the Anglo-Saxon Period.

Second Term—Anglo-Saxon completed, Early English—The Vision of Piers Plowman, Lectures on the Early English Period.

Third Term—Later English—Spenser: First Book of the Faerie Queen, Shakespeare, Select Plays; Lectures.

SECOND YEAR.

First Term—Rhetoric, Essays—Analytical and Critical; Lectures on Modern English Literature.

Second Term—Logic—Formal and Applied, Lectures on Modern English Literature concluded, Essays.

Third Term—Comparative Philology, with especial reference to English; Farrar's Families of Speech, Lectures, Essays.

The text-books in English in the required course are Morris's English Accidents, Hall's Longer English Poems, and Day's Rhetorical Praxis.

FRENCH LANGUAGE.

FIRST YEAR.

First Term—Breyman's French Grammar, Oppen's Reader (Grammar and Exercises.)

Second Term—Grammar continued. Oppen's French Reader.

Third Term—De Maistre's Voyage autour de ma Chambre, etc. Selections from Beranger.

SECOND YEAR.

First Term—Moliere's Les Fourberies de Scapin and Racine's Athalie. Corneille's Cinna.

Second and Third Terms—Besant's Edition of Early French, Bridge's History of French Literature, with Lectures on the Language and Literature.

GERMAN LANGUAGE.

FIRST YEAR.

First Term—Whitney's Grammar and Reader.

Second Term—German Lyrics, with Grammatical Exercises.

Third Term—Andersen's *Eisjungfrau*. Composition.

SECOND YEAR.

First Term—Goethe's *Egmont*, Schiller's *Don Carlos*.

Second and Third Terms—Lessing's *Emilia Galloti*; History of German Literature and Language, with Lectures.

LATIN LANGUAGE.

FIRST YEAR.

First Term—Livy, Selections; Exercises in writing Latin.

Second Term—Cicero, *Cato Major*; Horace, *Odes*.

Third Term—Horace, *Odes* and *Epodes*; History of Rome.

During the year lectures will be given on Roman History and Antiquities, and the reading of the authors will be accompanied with exercises in composition and in written translation.

SECOND YEAR.

First Term—Horace, *Epistles* and *Satires*; Tacitus, *Germania* and *Agricola*.

Second Term—Tacitus, *Histories*; Juvenal, *Satires*.

Third Term—Juvenal continued; Quintilian.

Lectures will be given during the year on the Latin Philology and Literature.

Admission.—Candidates for the first-year class will be examined as follows: In Latin Grammar (Allen and Greenough's is preferred); writing Latin; four books of Caesar's *Commentaries*; six orations of Cicero; and six books of Virgil's *Aeneid*. Allen and Greenough's Shorter Course is recommended as containing a sufficient amount of Latin prose.

GREEK LANGUAGE.

FIRST YEAR.

First Term—Xenophon, *Memorabilia*; Exercises in writing Greek.

Second Term—Herodotus, selection; History of Greece.

Third Term—Herodotus continued; Euripides, *Alceste*.

Lectures will be given during the year on Greek History and Antiquities.

SECOND YEAR.

First Term—Homer, *Odyssey*.

Second Term—Plato, *Phædo*; Sophocles, *Œdipus Tyrannus*.

Third Term—Demosthenes, *De Corona*.

Lectures will be given during the year on Greek Philology and Literature. Exercises in composition and written translation constitute an important feature of the course.

Admission.—Candidates for the first-year class will be examined as follows: In Greek Grammar (Goodwin's is preferred); in writing Greek, with the accents; and the first one hundred and eleven pages of Goodwin's Greek Reader (or three books of Xenophon's *Anabasis*).

POLITICAL ECONOMY, CIVIL POLITY, AND ACCOUNTS.

POLITICAL ECONOMY.

FIRST YEAR.

First Term—The Industrial Forces.

Second Term—The Science of Exchanges; Money; Credit; Commerce; the interference of Government.

Third Term—The Distribution of the Avails of Industry; Taxation; Interest; Rent; Profit; Wages; the Influences of Machinery; the Issues between the Owners of Labor and Owners of Capital; Assurance; Cooperation; Associated Labor; Communistic Theories.

SECOND YEAR.

First Term—The Laws of the Growth and Movement of Populations; Immigration and Emigration.

Second Term—The Influence of the Distribution of the Ownership of Land on the Characters of Civilization, and on the Wealth, Liberty, and Governments of Nations.

Third Term—The Physical, Intellectual, and Moral Conditions of Social Progress and Social Amelioration; the Unfortunate Classes and Persons in Society.

Books of Reference.—Writings of J. S. Mill, Walker, Adam Smith, Carey, Fawcett, Cairnes, Thornton, Spencer, Macleod, Bastiat, Malthus, Allison, Godwin, Maine, Cobden, Club Publications, Census Reports, Statistics of Ohio, Reports of Public Institutions of Ohio.

CIVIL POLITY.

FIRST YEAR.

First Term—The Theory of Rights; Rights of the various Persons in Community; the Citizen.

Second Term—The Political Guarantees of Rights; the Functions of Government.

Third Term—The Powers, Prohibitions, and Limitations of Government by Organic Constitutions; the Principles of Legislation.

SECOND YEAR.

First Term—The History of the Progress and Development of Constitutions and of Laws.

Second Term—State Constitutions of the United States; Municipal Law.

Third Term—The Federal Constitution and Government; its Relations to the States.

Books of Reference.—The Federalist, writings of Thomas Jefferson, James Madison, Adams, Story, Elliott's Debates, the works of De Tocqueville, De Lolme, Montesquieu, Grotius, Jeremy Bentham, Hallam, Austin, Locke, Forsyth, Lieber, Parsons, Draper, State Constitutions, Constitution of the United States.

SCIENCE OF ACCOUNTS.

First Term—The General Principles of Double-Entry Book-Keeping.

Second Term—The Applications to the Business of the Merchant, of the Farmer, and of the Manufacturer.

Third Term—Joint Stock Company Book-Keeping; Bank Book-Keeping; City, County, and State Accounts; the Uses of Vouchers, Checks, Drafts, Bills of Exchange, Letters of Credit, etc.

Books of Reference.—Treatises of Haswell, Chittenden, Cott, Bryant, Stratton and Dehan, Duff, Mayhew, Selden, Gilbert, Watters.

PROVISIONS FOR SPECIAL STUDENTS.

To students entering the College for the purpose of taking some special study, and who do not propose to complete a regular course, *full freedom in the selection of the branches which they will pursue is granted, subject only to the necessary limitation that they are prepared to take up with advantage the studies which they select.* They will enter the classes organized for the regular courses, and they can not be allowed to impair the quality of work done in the classes through their own inadequate preparation. Advanced students will find every facility for special work.

SPECIAL COURSE IN AGRICULTURE.

The College recognizes its obligations—imposed in the terms of the grant to which it owes its existence—to the great industrial interest of Agriculture. This obligation it has aimed to meet in the establishment of departments for thorough training in those branches of science upon which agriculture depends, *and also in fixing its standard of admission so that students may enter its college classes from the common schools.*

To the question, what education it purposes to furnish to the farmer, it may be answered that such a course as would secure the degree of Bachelor of Science from the College could be made to include all of the branches which in reality constitute agriculture, and, as far as theoretical instruction goes, could scarcely be improved in its adaptations to the necessities of the American farmer.

But this course requires for its completion six years from the common school, and there is good ground to fear that a young man who has been withdrawn for six years from the farm will scarcely return to it again. For the training, then, of the most of those who intend to devote themselves to practical agriculture, a scheme requiring less time must be found. In accordance with this view a three-years' course has been established, and is hereby submitted, which, it is believed, combines the general and the special as fairly as may be, and which offers to the farmer as much of what he needs as it is possible to comprise in three years of study. This course is shown in the appended schedule.

FIRST YEAR.

First Term—Human Physiology, English Language, Algebra.

Second Term—Physical Geography, Structural Botany, English Language, Geometry.

Third Term—Physical Geography, Systematic Botany, Algebra.

SECOND YEAR.

First Term—Physics, Chemistry, Zoology.

Second Term—Physics, Chemistry, Geometry.

Third Term—Physics, Chemistry, Plane Trigonometry.

History throughout the year.

THIRD YEAR.

First Term—Zoology, Agricultural Chemistry, Practical Agriculture.

Second Term—Diseases of Animals, their Medical and Surgical Treatment; Agricultural Chemistry, Practical Agriculture.

Third Term—Diseases of Animals, their Medical and Surgical Treatment; Geology as related to Agriculture, Practical Engineering.

It will be observed that this scheme agrees for two years with the prescribed course already given, while the third year supplements that course in as practical a manner as possible, and adapts it to the demands of this particular calling. In the strictly agricultural part of the course, practice will be constantly combined with theory, and the student will thus retain familiarity with the life from which he has come, and to which he expects to return.

TRAINING FOR TEACHERS AND STUDENTS IN MEDICINE.

The advantages offered by the College in the training required for two callings, in particular, are so great that special attention is invited to them. To students fitting themselves to become teachers of Natural Science, and also to those designing to pursue the study of Medicine, courses of study could not be more perfectly adapted, if they were designed expressly for such service. The resources of the College in the way of collections, and the methods of study adopted in the more advanced classes—the work being mainly done in laboratories and museums—make it safe to say that a very important addition to the educational facilities of the State is here made.

All students are required to take three daily recitations or their equivalent in laboratory work.

Certificates will be furnished to those who complete either the work of the Agricultural course, or of any special department.

ADMISSION.

For admission to the College, students must possess a competent knowledge of the branches taught in the common schools, viz., Reading, Orthography, Writing, Grammar, Geography, Arithmetic, and of Algebra through simple equations.

The attention of those proposing to enter the College is especially directed to the terms above given. A competent knowledge of the common school branches is required. The College does not undertake to do the work which the common schools are able and willing to do, viz., that of grounding the student in the elements of an English education. He must bring with him a fair measure of the training which these schools are prepared to give. If it be asked what is a competent knowledge of these branches, it may be answered that the candidate should certainly have knowledge enough of them to entitle him to a teacher's certificate from a County Board of Examiners.

Advanced standing will be granted to students upon their sustaining examination in any part of the course prescribed or elective.

It is, however, to be borne in mind that the amount of work done in several branches of science in the required course of the College, and the quality of work done in all, by reason of the superior facilities provided, render these studies quite different from those that are known by the same name in the schools of the State. Physics and Chemistry, for instance, each occupies a year of daily recitations, while Botany, Physiology, and Zoology are able to avail themselves of all the resources of their respective departments. All students, therefore, are earnestly advised upon entering the College to shape their work by the required course—in other words, to adopt this course as far as possible. Their studies are thus made consecutive, and a degree of symmetry is given to their education so far as it is completed here. It is expected that many students will be able to enter the second year of this course.

Students proposing to take the degree of A.B. will be examined in the usual amount of preparatory Latin and Greek, as shown in the schedules of these departments.

Students entering from other colleges will be required to bring certificates of honorable dismission.

EXPENSES.

A charge of \$5.00 per term, or \$15.00 per year, is made against all students, under the head of incidental expenses. Each student will also be charged with the cost of the materials he consumes in laboratory work.

Tuition is free in all departments of the College.

Two college dormitories have been provided, in one of which board and furnished rooms can be obtained at a charge of \$4.00 per week, two students occupying one room. If the student furnishes and takes care of his own room, he obtains board at \$3.25 per week. Provision for lighting and heating the rooms must be made at the student's expense. *Board bills must be paid monthly in advance.*

In addition, the College charges each student \$4.00 per term, or \$12.00 per year, for room rent. Seventy-five students can be accommodated in this building.

The second dormitory contains ten rooms, and is designed for students wishing to board themselves—or, if the rooms are not all occupied by such, they can be used by students who desire to room on the College grounds while boarding elsewhere. The rooms are provided with stoves that can be used in cooking. They are designed for two students, each one being charged \$4.00 per term, or \$12.00 per year, for room rent.

A deposit of \$5.00 is required at the beginning of every term from all students occupying rooms in the dormitories, as a guarantee against willful injury to rooms or halls. For damages in either dormitory that can not be traced to the individuals committing them, an assessment will be made upon the guarantee fund of the dormitory in which they occur. In case no assessment is made, the deposit will be returned at the end of the term.

All College dues except laboratory charges are to be paid in advance at the beginning of each term.

The College is now connected with the central portions of the city by a street railroad, and board, with furnished rooms, can be obtained in private families along the line of the railroad, and within convenient distance of the College, at rates varying from \$4.00 to \$5.00.

SUMMARY.

The expenses of a term of twelve weeks will include the following items:

Incidentals	\$5 00
Room rent.....	4 00
Board in College dormitory.....	48 00
Washing, light, etc.....	8 00

Total\$65 00

Students boarding themselves reduce this aggregate by at least \$20.00.

CALENDAR.

The Winter Term commences on Wednesday, January 5, 1876, and continues twelve weeks, closing on Tuesday, March 28.

The Spring Term commences on Wednesday, April 5, and continues eleven weeks, closing on Tuesday, June 20.

The Fall Term of the fourth collegiate year commences on Wednesday, September 20, and continues fourteen weeks, closing on December 22.

For further information, address the President or any member of the Faculty, or the Secretary of the Board of Trustees.

COLUMBUS, OHIO, *November, 1875.*

CATALOGUE OF STUDENTS.

NAME.	TOWN.	COUNTY.
Adams, C. T.	Steubenville	Jefferson.
Anderson, Newton M.	Columbus	Franklin.
Baily, Emmor S.	Waynesville	Warren.
Bennett, Edwin M., Jr.	Urbana	Champaign.
Brown, Albert C.	Pomeroy	Meigs.
Brown, Argo A.	Washington	Fayette.
Buchanan, Robert F.	Huntsville	Logan.
Buchanan, Samuel A.	"	Logan.
Burt, William	West Lafayette	Coshocton.
Cahill, Helen	Minneapolis, Minn.	
Coit, Belle M.	Columbus	Franklin.
Colvin, Cuvier A.	Cincinnati	Hamilton.
Colvin, Ralph L.	"	Hamilton.
Converse, George L., Jr.	Columbus	Franklin.
Converse, Wade	"	Franklin.
Corwin, Edwin E.	"	Franklin.
Coulter, Mary	"	Franklin.
Courtright, Effie Z.	Greencastle	Fairfield.
Cowles, Alfred H.	Cleveland	Cuyahoga.
Cunningham, Scott	Chillicothe	Ross.
Cunningham, Arthur J.	Columbus	Franklin.
Custer, Denny	London	Madison.
Day, Gertrude E.	Columbus	Franklin.
Dennison, Alan Neil	"	Franklin.
Dietrich, Charles H.	Defiance	Defiance.
Dilts, Robert N.	Hillsborough	Highland.
Dix, Mary	Columbus	Franklin.
Dodge, F. E.	Madison	Lake.
Donaldson, John M.	Columbus	Franklin.
Doney, S. D.	"	Franklin.
Downing, Wesley C.	Middleport	Meigs.
Dresel, Herman G.	Columbus	Franklin.
Dun, W. Angus, Jr.	London	Madison.
Farrar, Wyatt	Hillsborough	Highland.
Fieser, Louis F.	Columbus	Franklin.
Forry, W. H.	Newark	Licking.
Garvin, S. T.	Columbus	Franklin.
Gill, Herbert R.	"	Franklin.
Gilbert, Matthew J.	St. Louis, Mo.	
Glenn, Josephine T.	Columbus	Franklin.
Gregg, N. S., Jr.	Circleville	Pickaway.
Gehman, William M.	Urbana	Champaign.
Guitner, Ada J.	Westerville	Franklin.
Hall, Calvin C.	Crestline	Crawford.
Hamilton, William D.	Columbus	Franklin.
Hardy, George	"	Franklin.
Harrison, Burr R.	Cedarville	Greene.
Holliday, Robert	Cassville	Harrison.

CATALOGUE OF STUDENTS—Continued.

NAME.	TOWN.	COUNTY.
Holloway, Charles M., Jr.	Cincinnati	Hamilton.
Holman, Harry	Columbus	Franklin.
Howard, Ferdinand	"	Franklin.
Howard, Curtis C.	"	Franklin.
Hughes, Frank L.	"	Franklin.
Humphrey, J. S.	Findlay	Hancock.
Hyatt, Edward	Augusta	Carroll.
Innis, Minnie M.	Columbus	Franklin.
Jones, Anna	Hilliard	Franklin.
Jones, Henry O.	Columbus	Franklin.
Jones, J. Paul	Hilliard	Franklin.
Junk, Pryor W.	Mt. Sterling	Madison.
Keffer, Bertha	Columbus	Franklin.
Keffer, Mary	"	Franklin.
Kinnaird, William J.	Camp Chase	Franklin.
Kellerman, M. F.	Cedar Hill	Fairfield.
Kelly, Thomas	McArthur	Vinton.
Koehler, Nicholas	Hilliard	Franklin.
Layman, Charles A.	Columbus	Franklin.
Linton, Libbie F.	"	Franklin.
Loving, Joseph S.	"	Franklin.
Markley, Horatio	Nevada	Wyandot.
Marple, Wilbur B.	Columbus	Franklin.
McCloud, Richard H.	London	Madison.
McClung, William E.	Troy	Miami.
McCormick, John H.	Columbus	Franklin.
McDonald, John M.	"	Franklin.
McFadden, John F.	Cadiz	Harrison.
McQuigg, John	Pomeroy	Meigs.
Mendenhall, Carrie	Marlborough	Stark.
Miller, W. C.	Gallipolis	Gallia.
Miner, Ellen J.	Columbus	Franklin.
Miskimen, John C.	Newcomerstown	Tuscarawas.
Morrison, M. Frank	Columbus	Franklin.
Mustaine, Jefferson K.	West Liberty	Logan.
Myers, James F.	Cincinnati	Hamilton.
Noble, Warren F.	Tiffin	Seneca.
Nutting, M. E.	Kent	Portage.
Orton, Charles J.	Columbus	Franklin.
Palmer, Charles O.	Cleveland	Cuyahoga.
Peirce, Howell	South Charleston	Clarke.
Perry, Oliver H.	Columbus	Franklin.
Pfeifer, Edward	"	Franklin.
Postle, Frank L.	Camp Chase	Franklin.
Pratt, Charles E.	South Charleston	Clarke.
Preston, Eva M.	Columbus	Franklin.
Pugh, George E.	Reynoldsburg	Franklin.
Putnam, D. C.	Springfield	Clarke.
Rector, Allen T.	Kinderhook	Pickaway.
Randabaugh, John	Celina	Mercer.
Schueller, A. W.	Columbus	Franklin.
Seeley, Edward A.	Austinburg	Ashtabula.
Seeley, Uri, Jr.	"	Ashtabula.
Shinn, Charles A.	Selma	Clarke.
Short, Sidney H.	Columbus	Franklin.
Simmons, E. B.	Osceola	Crawford.
Sloane, J. C.	Ashland	Ashland.
Smythe, Perry P.	Columbus	Franklin.
Stambaugh, George	Gahanna	Franklin.
Snyder, Henry	Springfield	Clarke.

CATALOGUE OF STUDENTS—Continued.

NAME.	TOWN.	COUNTY.
Staley, W. Clive.....	Mechanicsburg	Champaign.
Stowell, E. Walker.....	Sidney	Shelby.
Sullivant, Jane D.....	Columbus	Franklin.
Taft, John S.....	"	Franklin.
Thompson, John B.....	Hillsborough	Highland.
Tompkins, Harry P.....	Columbus	Franklin.
Townshend, Alice M.....	"	Franklin.
Townshend, Arthur B.....	"	Franklin.
Townshend, Harlette N.....	"	Franklin.
West, James P.....	St. Clairsville.....	Belmont.
Williams, Alice.....	Columbus	Franklin.
Williams, George	"	Franklin.
Wilson, William M.....	Yellow Springs	Greene.
Woodward, William B.....	Tippecanoe City.....	Miami.
Vorys, A. J.....	Lancaster	Fairfield.